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DEPARTMENT OF HIGHWAYS

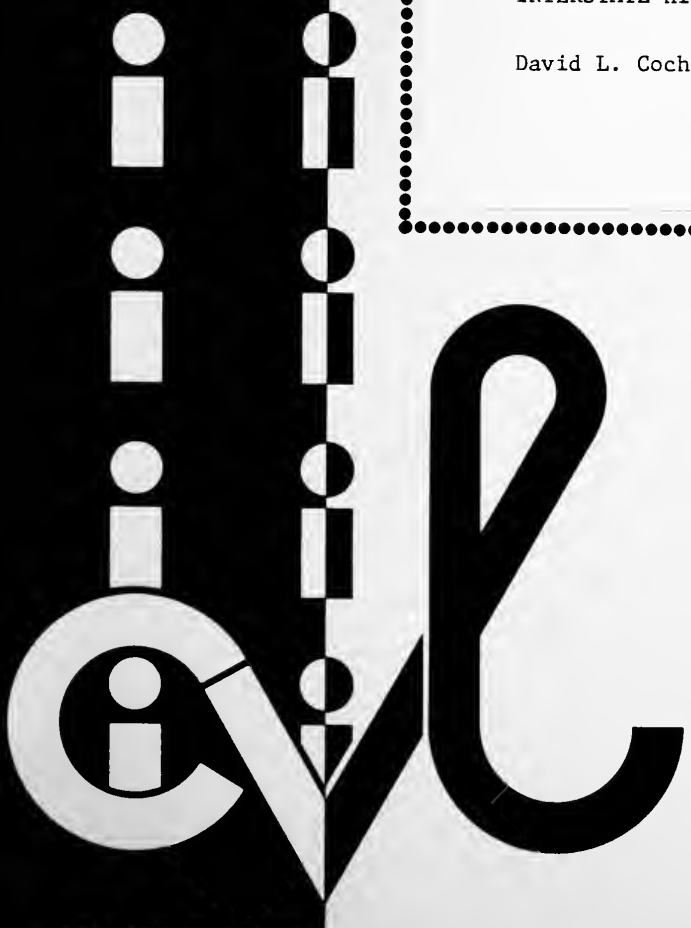
JOINT HIGHWAY RESEARCH PROJECT

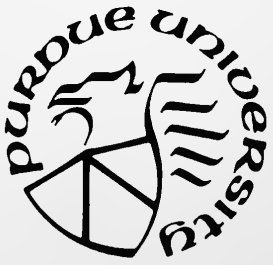
JHRP-90/2

Traffic Report

SPEED TRENDS ON INDIANA RURAL INTERSTATE HIGHWAYS

David L. Cochran





PURDUE UNIVERSITY

JOINT HIGHWAY RESEARCH PROJECT

JHRP-90/2

Traffic Report

SPEED TRENDS ON INDIANA RURAL INTERSTATE HIGHWAYS

David L. Cochran

Traffic Report

SPEED TRENDS ON INDIANA RURAL INTERSTATE HIGHWAYS

TO: Harold L. Michael, Director
Joint Highway Research Project

February 15, 1990

FROM: David L. Cochran, Engr. Tech.
Joint Highway Research Project

Project: C-36-10C
File: 8-3-3

Attached is the 1989 report for Speed Trends On Indiana Rural Interstate Highways. This report includes calendar years 1983 through 1989, and is the second speed survey made exclusively of rural interstate data. All data were retrieved from locations that have been exempted from the 55 MPH Speed Compliance Certification Program.

The results of this study show that all vehicles on all Indiana rural interstate highways, had an average speed of 65.6 mph in 1989. This is 1.6 mph higher than the 1988 average speed of 64.0 mph, and 1.7 mph higher than the average speed of 63.9 mph during the 1987 calendar year. In addition, comparing Statewide speed versus vehicle length during 1989 indicates that the average speed of cars was 66.6 mph. This survey also shows that short trucks (21-45 feet) had an average speed of 64.4 mph, and long trucks (46-99 feet) had an average speed of 63.3 mph. The final Statewide results also indicate that 85 percent of all types of vehicles on all rural interstate highways are traveling at, or less than 73.9 mph.

The charts, Figure 2 and Figure 3 on page 7, graphically illustrate the speeds Statewide for all locations, and the percent greater than speed respectively. Table 5 on page 12 summarizes an analysis of speed versus vehicle length Statewide during 1989, while Figure 5 graphically represents those results. Appendix A contains summarized statistics for each individual monitoring station from 1983 through 1989, while the Tables and Figures in Appendix B compare all stations. The Tables and Figures in Appendix C summarize the speed by length data at two stations that were used for comparing speed by length changes in 1989 from 1988. Summary Tables and Figures relative to speed versus length during 1989 can be found in Appendix D. Calculations for final Statewide statistics are located in Appendix E.

Copies of this report will be sent to the Indiana Department of Transportation. Copies of this report are requested for release to the Indiana State Police and other highway safety agencies, which is normal procedure for these reports.

Respectfully submitted,

David L. Cochran

David L. Cochran
Traffic Research

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Traffic Research Report

SPEED TRENDS ON INDIANA RURAL INTERSTATE HIGHWAYS

by

David L. Cochran
Traffic Research

Joint highway Research Project

Project No.: C-36-10C

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Prepared as part of the continuing collection
of planning data as included in the

Annual HPR Part I Work Program

of the

Indiana Department Of Transportation

in cooperation with the

Federal Highway Administration

Purdue University
West Lafayette, Indiana 47907

February 15, 1990

SPEED TRENDS ON INDIANA RURAL INTERSTATE HIGHWAYS

Scope of Study

This report is a comparison and analysis of speed monitoring sessions made exclusively on Rural Interstate highways in Indiana for calendar years 1983 through 1989. Final Statewide results are listed in Table 2 and graphically illustrated in Figures 2 and 3.

The studies were conducted by the Joint Highway Research Project (JHRP) at Purdue University. Federal Highway Planning and Research (HPR) funds from Part I (Planning) were used in part for the expenses of this study. Personnel of JHRP collected the speed data, analyzed the information and reported these results.

Speeds were measured at historical Rural Interstate locations which were exempted from the 55 MPH Certification Program on June 1, 1987. These data are used as a comparison of speed data retrieved from the same locations during prior years. All locations were originally selected by methods determined from the FHWA "Speed Monitoring Program Procedural Manual" (SMPPM). Data from two new locations are also included in this report. These sites were required additions to the 55 MPH Certification Program for the 1988 Speed Year survey. All Rural Interstate highways in Indiana are now exempt from that program. The locations monitored are listed in Table 1 and shown in Figure 1.

There are presently, nearly 850 miles of rural interstate highways in Indiana. The rural interstate highways in Indiana represents only 0.9 percent of all highway facilities; however, it handles approximately 10.9 percent of all daily vehicle miles traveled. These rural interstate highways represent approximately 8.3 percent of facilities which are posted at, or greater than 55 mph, but handle approximately 21.3 percent of the daily vehicle miles traveled. Of this total, only 31 miles remain posted at 55 mph for various reasons. The posted speed limit at all monitored locations was 65 mph, except for RIC-11. This site was posted at 55 mph due to the highway "crown" contour. Since RIC-11 is located well out of the local urbanized area, and is upstream of many miles of highway posted at 65 mph, it is desirable to retain this location in the survey.

The speed limit on Indiana rural interstate highways was posted at 65 mph for all vehicles effective June 1, 1987. However, a maximum speed limit of 55 mph for trucks with a gross weight of 13 tons was legislated in Indiana on April 1, 1988, and became effective around May 1, 1988. Additional legislation was passed on April 1, 1989 which increased the allowable speed limit for trucks with a gross weight of 13 tons to 60 mph. Enforcement of the increased speed limit for these trucks became effective on July 1, 1989. The direct comparative value of 65 mph speed data collected prior to, or after these dates may be affected somewhat by these "dual" speed limits, however the effects should not be too significant.

TABLE 1

Sampling Segments
65 MPH Rural Interstate

RIS-01	I-69, Steuben County, 5 miles south of I-80 to I-80, Northbound.
RIS-02	I-69, Grant County, U.S. 35 to S.R. 18, Southbound.
RIS-03	I-70, Hancock County, S.R. 9 to S.R. 109, Westbound.
RIC-04	I-80, Porter County, S.R. 49 to LaPorte County line, Westbound.
RIS-05	I-74, Boone County, Montgomery County line to S.R. 75, Westbound.
RIC-06	I-64, Dubois County, Spencer County line to Hawk Run Creek, Westbound.
RIS-07	I-70, Henry County, S.R. 109 to Bridge 5146, Westbound.
RIC-08	I-69, Huntington County, Wabash River to Flat Creek, Northbound.
RIC-09	I-80, Porter County, Portage City limit to S.R. 49, Westbound.
RIS-10	I-65, Tippecanoe County, Bridge 5555 to Bridge 5548, Southbound.
RIC-11	I-65, Lake County, 2.5 miles north to 1.4 miles south of U.S. 231, Southbound.
RIC-12	I-69, Madison County, 1.1 miles north to 5.5 miles north of Scatterfield Road (S.R. 9), Southbound.

RIS-1
RIC-4
RIC-9
RIC-11
RIC-8
RIS-2
RIS-10
RIS-5
RIC-12
RIS-7
RIS-3
RIC-6
MICHIGAN CITY
GARY
SOUTH BEND
MISHAWAKA
ELKHART
LAPORTE
MERRILLVILLE
ANGOLA
AUBURN
FORT WAYNE
MARION
LAFAYETTE
MUNCIE
ANDERSON
CRAWFORDSVILLE
LEBANON
CARMEL
INDIANAPOLIS
BROWNSBURG
GREENFIELD
RICHMOND
GREENWOOD
FRANKLIN
SHELBYVILLE
TERRE HAUTE
GREENSBURG
COLUMBUS
LAWRENCEBURG
SEYMOUR
NEW ALBANY
JEFFERSONVILLE
EVANSVILLE
65 MPH
LOWER LIMIT
RURAL INTERSTATE
65 MPH SPEED STUDY
LOCATIONS

FIGURE 1

Introduction

The Joint Highway Research Project (JHRP) has conducted annual speed studies (currently entitled "Traffic Speed Report") for the Indiana Department of Transportation (INDOT) since 1955. In addition, JHRP provides statistical speed data reporting under the research study title of "Speed Trends on Indiana Highways" for use in determining Annual Certification of Speed Limit enforcement for the 55 MPH Speed Compliance Program.

This report addresses some of the changes that have occurred due to passage of the Federal-Aid Highway Act of 1987. Specifically, the change in speed limit posting from 55 mph to 65 mph on Rural Interstate highways in Indiana, in accordance with Section 174 of the Surface Transportation and Uniform Relocation Act of 1987.

55 MPH History

In 1973, Congress established a national maximum speed limit of 55 mph as a temporary oil-energy conservation measure. Congress made the national maximum speed limit permanent in 1974. The Federal-Aid Amendments of 1974 made annual state enforcement certification a prerequisite for approval of Federal-aid highway projects. Annual statistics from JHRP speed monitoring programs are a part of this annual certification.

The annual speed certification monitoring program followed a sequence of Federal procedural manuals. The first, "Procedural Guide for Speed Monitoring," issued in September, 1975, provided for monitoring sessions during normal workdays on level, tangent highway sections under "free-flow" conditions.

The Federal government felt that public compliance with the national maximum speed limit worsened, and Congress passed the Highway Safety Act of 1978. This Act provided means for withholding Federal-Aid highway funds, or awarding incentive grants based on favorable annual speed compliance data. The incentive grant program was later discontinued.

The decision for penalties in withholding Federal-Aid highway funds was based on the fraction of all vehicles exceeding 55 mph on roads and streets posted at 55 mph (rather than "free-flow" vehicles on state highways, as previously). In response, the FHWA issued "Interim Speed Monitoring Procedures", which changed the methods for the collecting and reporting of speed information for Speed Years 1979 and 1980. The final "Speed Monitoring Program Procedural Manual" (SMPPM) was issued in May of 1980.

The SMPPM required several changes in the speed monitoring program for Indiana, and a new set of 35 speed monitoring locations had to be chosen by a random selection process. Since 1980, some locations have been moved, either temporarily or permanently. The historical speed monitoring locations in Indiana could no longer be included in the compliance program, and annual results of the historical program (SPOTSPEED) are now reported separately.

65 MPH History

On April 2, 1987, the Federal-aid Highway Act of 1987 (Act) was enacted. The Federal Highway Traffic Safety Administration (NHTSA) amended section 174, 23 U.S.C. 154 as mandated by the Act. This amendment gave "the States the authority to increase, without the loss of Federal-aid funds, the maximum speed limit to no more than 65 mph..... on Interstate Systems located outside an urbanized area of 50,000 (population) or more".

The amendment states that "States may raise speed limits on eligible highway sections immediately without waiting for the end of the fiscal year". For Indiana, the effective date for the change from 55 mph to 65 mph on eligible Rural Interstate sections was June 1, 1987. Also, "Any State choosing to increase the speed limit from 55 mph.... will have to adjust the speed sampling and analysis plan in effect for the fiscal year in which the limit is raised".

An FHWA Memorandum was distributed which advised States that elected to increase the speed limit on eligible sections of Rural Interstate, that "VMT represented by the mileage on which the speed limit is raised above 55 mph will be excluded from the calculation of FY 1987 55 mph speed limit compliance statistics". As of June 1, 1987, all historical 55 mph Rural Interstate locations in Indiana were exempted from the 55 MPH Certification Program.

However, initial revised VMT weighting factors in September 1987, for use during the 1988 Speed Year, mandated the selection of two new rural interstate locations in areas still posted at 55 mph. The two new locations were monitored until September 1988, but a final revision of the VMT weighting factors exempted all rural interstate data from the 1988 Speed Year Annual Report, and from further inclusion in the 55 MPH Compliance Certification Program.

Sample Size

The historical rural interstate speed monitoring sites were comprised of four (4) control, and six (6) standard locations. The two (2) new control locations required for the 1988 Certification Program have been added to the rural interstate speed trends study. Control locations were monitored once each Speed Quarter, while standard locations were monitored once each Speed Year. All sites are now monitored only once per year, and the original locations and directions have been retained. Currently, 12 locations are being monitored for reporting data in association with "Speed Trends On Indiana Rural Interstate Highways".

Equipment and Procedures

The equipment used for monitoring speed consisted of a Streeter-Richardson model 241 classifier. Sensors consisted of permanent or temporary inductive loops or tape switches. Calibrations at installations were performed using a Kustom Signals H.A.W.K. K-band radar unit. This method, procedures used, and accuracy results have been approved for Indiana by the FHWA for use in the 55 MPH Certification Program.

Continuous data periods of 24 hours were extracted from a single monitoring session, generally lasting 36 to 72 hours. The data period extracted was pre-selected by calendar date or day for comparison with data taken during a similar period at the same location. Occasional problems relative to highway construction in the area to be monitored, weather, equipment failure or schedule delays may require alternate periods.

Most locations were monitored during a date period as closely related to the previous session as practicable, and historical data prior to 1988 were selected to give a reasonable balance over the year. Some adjustments in dates of monitoring speeds during 1988 and 1989, at certain locations, were necessary to take advantage of permanent loop locations during cold weather periods when placement of temporary sensors is difficult or impossible.

Results of Statewide Analysis

The results from this study show that the Statewide average speed of all vehicles on the rural interstate highways has increased moderately. The average speed of all vehicles was up by 1.6 mph at 65.6 mph during 1989, when compared to an average speed of 64.0 mph in 1988 (Figure 2). The average speed in 1989 was 1.7 mph higher than the average speed in 1987 and 5.3 mph higher than the average speed of 60.3 mph in 1986. Prior to 1989, the highest average speed of 64.3 mph occurred during 1984 (Figure 2).

The percent of vehicles exceeding 65 mph was also up in 1989 over previous years (Figure 3), and is higher than the previous maximum posted during 1984. The number of motorists exceeding 65 mph increased by 7.4 percent in 1989 from 1988, and increased by 10.4 percent from 1987. Alternately, the number of vehicles exceeding 55 mph decreased in 1989 by 2.1 percent as compared to 1988 (Figure 3). This phenomena may be due, in part, to reducing the speed limit from 65 mph to 55 mph for trucks during 1988, and increasing the speed limit for trucks to 60 mph during 1989.

TABLE 2

Statewide Speeds And Percent Greater Than Speed

		SPEED			RAW PERCENT GREATER THAN				
YEAR	TOTAL	MEAN	50TH	85TH	55mph	60mph	65mph	70mph	75mph
1983	61617	61.7	62.6	70.0	84.4	59.1	31.1	11.1	2.6
1984	67319	64.3	64.8	71.6	91.6	73.0	43.1	16.4	5.2
1985	72794	59.9	60.5	67.2	82.1	46.8	17.8	5.8	1.3
1986	77204	60.3	60.8	66.3	84.0	48.2	15.7	4.0	0.8
1987	77309	63.9	64.4	70.1	95.3	76.2	37.6	9.9	2.0
1988	112562	64.0	64.6	70.6	93.5	74.6	40.6	12.7	2.9
1989	111485	65.6	65.6	73.9	91.4	75.1	48.0	21.8	10.0

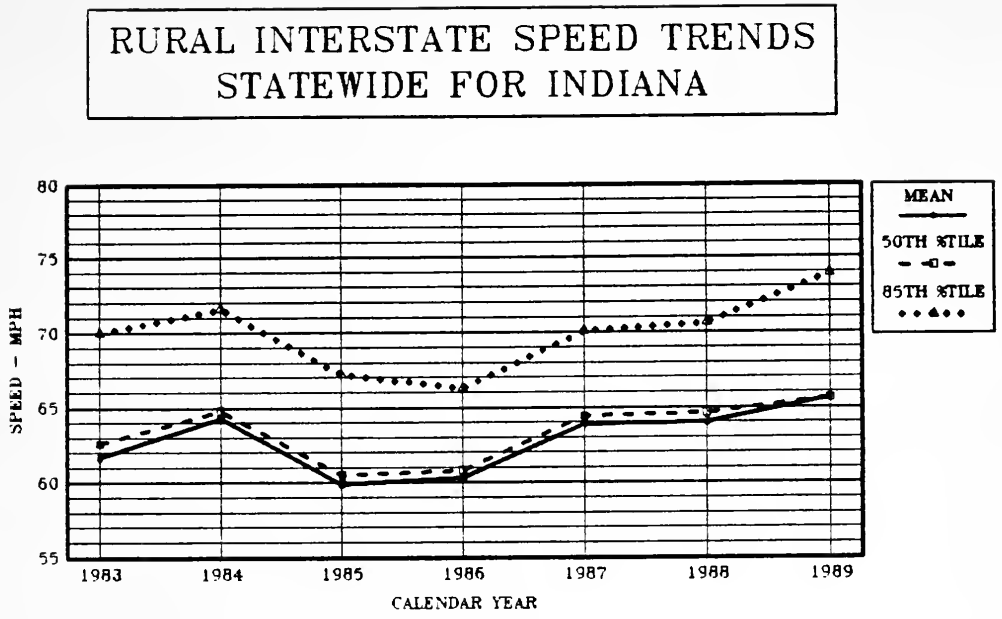


FIGURE 2

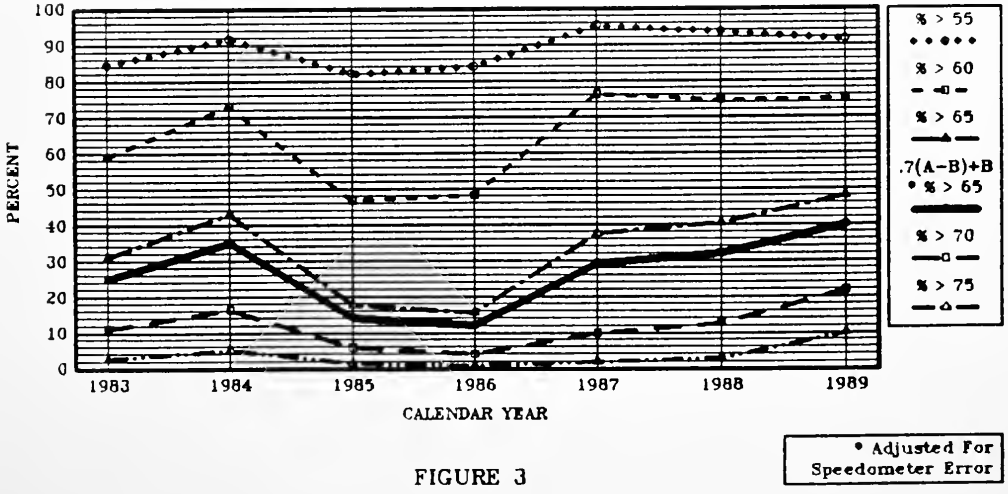


FIGURE 3

Examination of Speed by Length

Due to the passage of the reduced speed limit laws for trucks with a gross weight of 13,000 pounds or more, interest has grown for actual results of overall compliance with the lower limit. The "dual" speed limit will effect direct comparison of historical statistics somewhat, but overall results should not be drastically different.

In order to determine different vehicular compliance with the 65 mph and 55 mph speed limits on Indiana rural interstate highways during 1988, two surveys were made at two locations to examine speed versus vehicle length. The sites selected for this sample were RIS-03 and RIC-06. These locations were used because they have permanent loop installations, are geographically different, and appear to have different historic speed trends. Three vehicle lengths were arbitrarily selected for use in the survey (Table 3). All rural interstate speed monitoring sessions during 1989 implemented these same criteria.

These speed by length data were not used as part of the overall 1988 Statewide statistics, but were reported separately for comparison to the Statewide summary. The results of that small sample are summarized in Table 4-A and graphically illustrated in Figure 4-A. The results show that the three-day combined average speed at RIS-03 and RIC-06 for all combined trucks was 61.5 mph (Figure 4-A). All cars for the same time period had an average speed of 66.6 mph. The results from 1988 indicated that the average speed of all trucks was 5.1 mph lower than the average speed of cars. However, long trucks had a higher average speed than short trucks by 0.7 mph (Figure 4-A).

When all trucks were combined during the 1988 survey at RIS-03 and RIC-06, 77.6 percent were exceeding 55 mph, and 24.9 percent were exceeding 65 mph (Table 4-A). There were 94.3 percent of the cars exceeding 55 mph, and 55.1 percent of the cars exceeding 65 mph for the same time period. In addition, 78.7 percent of the long trucks were exceeding 55 mph, while 71.5 percent of the short trucks were exceeding 55 mph (Table 4-A).

TABLE 3

Vehicle Type Vs. Length

VEHICLE TYPE	LENGTH	FHWA VEHICLE CLASS
CARS	0-20 Feet	1 thru 3
SHORT TRUCKS	21-45 Feet	4 thru *8 (*3 - Axle)
LONG TRUCKS	46-99 Feet	*8 thru 13 (*4 - Axle)

TABLE 4-A

RIS-03 And RIC-06 Combined Vehicle Length

For September and December 1988

		SPEED			RAW PERCENT GREATER THAN				
VEHICLE TYPE	TOTAL	MEAN	50TH	85TH	55MPH	60MPH	65MPH	70MPH	75MPH
Cars (0-20')	28880	66.6	66.9	74.9	94.3	82.0	55.1	26.0	11.7
S Trk.(21-45')	2898	60.9	60.7	69.7	71.5	48.8	25.4	11.5	6.5
L Trk.(46-99')	15748	61.6	61.0	69.6	78.7	50.2	24.8	11.2	6.1
All Trucks	18646	61.5	61.0	69.6	77.6	49.9	24.9	11.2	6.1
All Vehicles	47526	64.6	64.7	73.4	87.7	69.4	43.3	20.2	9.5

TABLE 4-B

RIS-03 And RIC-06 Combined Vehicle Length

For September and December 1989

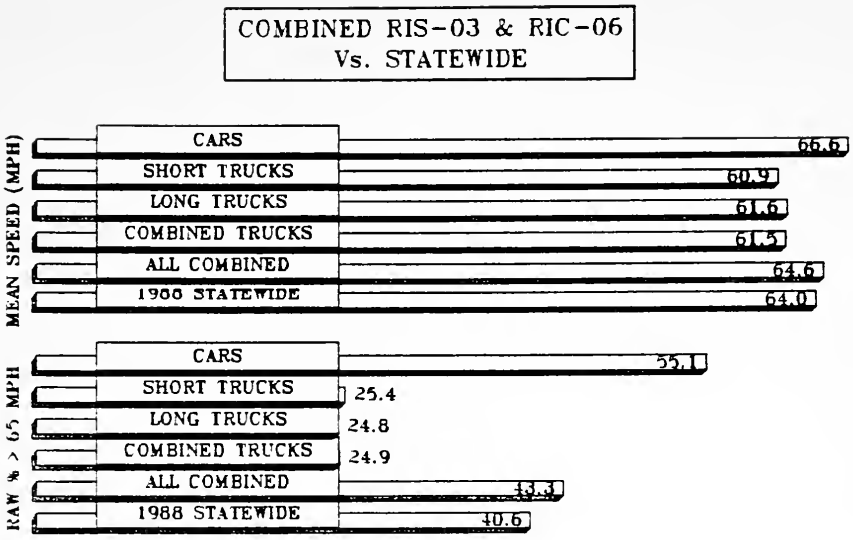
		SPEED			RAW PERCENT GREATER THAN				
VEHICLE TYPE	TOTAL	MEAN	50TH	85TH	55MPH	60MPH	65MPH	70MPH	75MPH
Cars (0-20')	29452	66.2	66.8	73.0	96.2	84.9	55.6	21.1	6.0
S Trk.(21-45')	2584	60.8	60.3	68.4	77.7	45.3	20.8	8.9	5.1
L Trk.(46-99')	16496	60.3	60.3	66.6	80.8	44.6	16.4	4.7	1.3
All Trucks	19080	60.4	60.3	66.9	80.4	44.7	17.0	5.3	1.8
All Vehicles	48532	63.9	64.3	71.0	90.0	69.1	40.4	14.9	4.4

TABLE 4-C

RIS-03 And RIC-06 Combined Vehicle Length

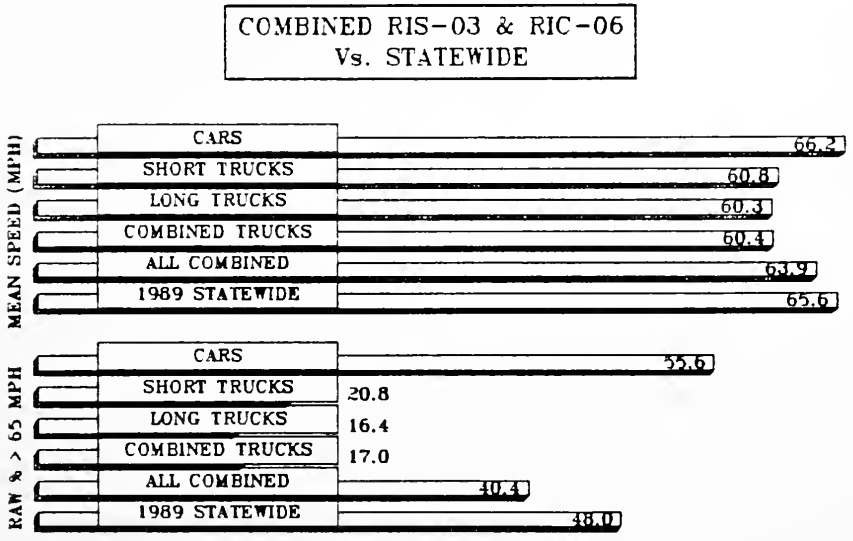
Net Change In 1989 From 1988

		SPEED			RAW PERCENT GREATER THAN				
VEHICLE TYPE	TOTAL	MEAN	50TH	85TH	55MPH	60MPH	65MPH	70MPH	75MPH
Cars (0-20')	572	-0.4	-0.1	-1.8	1.9	3.0	0.5	-4.8	-5.8
S Trk.(21-45')	-314	-0.1	-0.4	-1.3	6.3	-3.4	-4.6	-2.6	-1.4
L Trk.(46-99')	748	-1.3	-0.8	-3.0	2.1	-5.6	-8.4	-6.5	-4.7
All Trucks	434	-1.1	-0.7	-2.8	2.8	-5.3	-7.9	-6.0	-4.3
All Vehicles	1006	-0.7	-0.4	-2.5	2.3	-0.3	-2.8	-5.3	-5.2



FOR 1988

FIGURE 4-A



FOR 1989

FIGURE 4-B

RIS-03 and RIC-06 were monitored again during 1989 over the same period monitored in 1988. The 1989 results are summarized in Table 4-B, and graphically represented in Figure 4-B. Results, from combining the 3-day monitoring session during September at RIS-03 with the 3-day monitoring session during December at RIC-06, indicate that the average speed for all combined trucks was 60.4 mph (Figure 4-B).

All cars for the same time period had an average speed of 66.2 mph (Figure 4-B). Therefore, the average speed of all trucks appeared to be 5.8 mph slower than all cars. Long trucks had an average speed of 60.3 mph, which was 5.9 mph slower than cars, and 0.5 mph slower than short trucks.

The 1989 survey, which combined RIS-03 and RIC-06 showed that 80.4 percent of all trucks were exceeding 55 mph, 44.7 percent were exceeding 60 mph, and 17.0 percent were exceeding 65 mph (Table 4-B). Additionally, 55.6 percent of cars were exceeding 65 mph, while 44.6 percent of long trucks were exceeding 60 mph (Table 4-B).

The net change in results in 1989 from 1988 by combining RIS-03 and RIC-06 is shown in Table 4-C. The mean, median, and 85th percentile speed in all categories showed a reduction from 1988 levels. The largest reduction of 3.0 mph occurred in the long truck category (Table 4-C). Similarly, a reduction occurred in all percent greater than speed categories, except for percent greater than 55 mph (Table 4-C). The only other exception was for cars in percent greater than 60 mph and percent greater than 65 mph. Both categories were up slightly from 1988 levels.

Conclusions

All speed monitoring sessions conducted during 1989 were done in the same manner as RIS-03 and RIC-06 in 1988. An analysis of Statewide results of speed by vehicle length is summarized in Table 5, and graphically represented in Figure 5.

These results indicate that the average speed for cars on a Statewide basis was 66.6 mph in 1989 (Table 5). The median speed for cars was 66.7 mph, while the 85th percentile speed was 74.5 mph. The average speed for short trucks on a Statewide basis was 64.4 mph in 1989 (Table 5). The median speed for short trucks was 63.8 mph, while the 85th percentile speed was 74.8 mph. The average speed of long trucks on a Statewide basis was 63.3 mph in 1989 (Table 5). The median speed for long trucks was 63.1 mph, while the 85th percentile speed was 70.8 mph.

Speed by length statistics for 1989 indicate that Statewide, 54.4 percent of the cars are exceeding 65 mph and 62.4 percent of the long trucks are exceeding 60 mph (Table 5). Short trucks are exceeding 65 mph at a rate of 39.8 percent, and have the highest percent exceeding 75 mph and 80 mph at 13.0 percent and 7.8 percent respectively (Table 5).

TABLE 5

Analysis of Statewide Speed by Length During 1989

		SPEED			RAW PERCENT GREATER THAN				
VEHICLE TYPE	TOTAL	MEAN	50TH	85TH	55MPH	60MPH	65MPH	70MPH	75MPH
Cars (0-20')	75321	66.6	66.7	74.5	93.8	81.1	54.4	24.8	11.0
S Trk.(21-45')	6525	64.4	63.8	74.8	83.7	62.9	39.8	21.1	13.0
L Trk.(46-99')	29639	63.3	63.1	70.8	86.8	62.4	33.3	14.2	6.7
All Trucks	36164	63.5	63.2	71.3	86.3	62.5	34.5	15.5	7.9
All Vehicles	111485	65.6	65.6	73.9	91.4	75.1	48.0	21.8	10.0

Statewide speed trends on Indiana rural interstate highways were up slightly in 1989 from 1988 (Table 2). The average speed in 1989 was also found to be higher than the peak Statewide average speed noticed during 1984 (Figure 2). The reduced speed limits imposed on trucks having a gross weight of 13 tons during 1988 and 1989, had an obvious direct effect on the overall results.

For the 55 MPH Speed Compliance Certification Program, the FHWA and NHTSA gives a procedure for adjusting the percentage of vehicles traveling over 55 mph to account for speedometer variability and sampling error. The speedometer adjustment for the percentage over 65 mph can be made using a similar procedure, and is calculated as follows:

If A = percent exceeding 65 mph

and

B = percent exceeding 70 mph

Then C = .7(A - B) + B (adjusted percent of vehicles exceeding 65 mph)

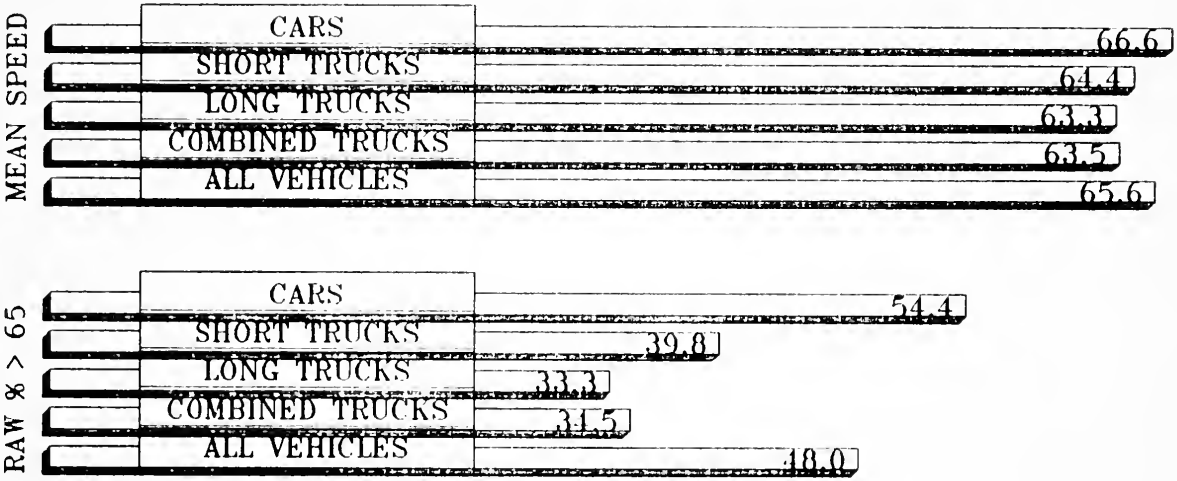
In Indiana for 1989:

A = 48.0 and B = 21.8 (Table 2); then,

C = .7(48.0 - 21.8) + 21.8; C = 40.1% exceeding 65 mph

The SMPPM procedure allows an additional adjustment by using the lower limit of the confidence interval for the percentage exceeding 65 mph. This lower limit is obtained by subtracting 1.78 times the sample standard deviation from the adjusted percent exceeding 65 mph. This procedure established a target for sampling accuracy of 2.0% at a 95% one-sided confidence level.

RURAL INTERSTATE SPEED TRENDS
STATEWIDE FOR INDIANA
ANALYSIS BY LENGTH



CARS = 0-20'
SHORT TRUCKS = 21-45'
LONG TRUCKS = 46-99'

FOR 1989 CALENDAR YEAR

FIGURE 5

Following the prescribed method of calculation, the Statewide standard error was 0.90%. The SMPPM assumes that the standard error has a Student's t distribution with degrees of freedom equal to the number of speed monitoring locations. Since 12 locations are monitored, the 95th percentile of the Student's t distribution with 12 degrees of freedom is 1.78. Therefore, the accuracy obtained was:

D = 1.78 x 0.90; therefore D = 1.60%

and

F(inal) = C - D; so, F = 40.1 - 1.60;

therefore,

F = 38.5% exceeding 65 mph.

The final Statewide estimated percentage of vehicles exceeding 65 mph on rural interstate highways in Indiana, adjusted for speedometer error and sampling error was 38.5%. The Statewide average speed was 65.6 mph in 1989, and 85% of all vehicles on Indiana rural interstate highways were traveling at, or less than 73.9 mph.

Appendix A

Rural Interstate Speed Data

by

Speed Monitoring Location

Speed Data Tables (A-1 thru A-12)

Speed Figures (A-1A thru A-12A)

Percent Figures (A-1B thru A-12B)

TABLE A-1

SPEED DATA FOR RIS-01

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
WED	20 Jul 83	5742	57.6	58.6	64.1	4127	71.9	1677	29.2	375	6.5	106	1.8	28	0.5	6	0.1	0	0.0
FRI	14 Sep 84	8979	60.5	60.8	65.6	7984	88.9	4376	48.7	1093	12.2	179	2.0	50	0.6	18	0.2	11	0.1
WED	4 Sep 85	5133	57.7	58.6	64.3	3692	71.9	1529	29.8	379	7.4	84	1.6	14	0.3	6	0.1	0	0.0
SAT	6 Sep 86	5692	60.6	61.0	65.8	4949	86.9	2832	49.8	782	13.7	211	3.7	47	0.8	12	0.2	5	0.1
TUE	22 Sep 87	7178	66.4	66.8	71.9	7079	98.6	6543	91.2	4019	56.0	1249	17.4	322	4.5	55	0.8	0	0.0
THU	22 Sep 88	6304	66.0	66.0	73.9	5881	93.3	4930	78.2	3168	50.3	1421	22.5	608	9.6	280	4.4	110	1.7
THU	14 Sep 89	6651	64.5	65.2	72.7	5966	89.7	4889	73.5	3019	45.4	1245	18.7	523	7.9	221	3.3	86	1.3

TABLE A-2

SPEED DATA FOR RIS-02

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
MON	13 Jun 83	6305	58.8	60.0	65.4	5193	82.4	2642	41.9	721	11.4	190	3.0	39	0.6	7	0.1	0	0.0
FRI	18 May 84	6825	60.7	61.2	66.2	5916	86.7	3529	51.7	1049	15.4	230	3.4	53	0.8	23	0.3	0	0.0
THU	15 Nov 84	5467	59.3	60.0	65.3	4504	82.4	2294	42.0	590	10.8	151	2.8	43	0.8	14	0.3	0	0.0
THU	10 Jun 86	7571	58.8	59.7	65.0	6236	82.4	2952	39.0	678	9.0	134	1.8	26	0.3	7	0.1	2	0.0
WED	3 Jun 87	7829	62.4	63.1	68.0	7340	93.8	5396	68.9	1800	23.0	272	3.5	48	0.6	9	0.1	2	0.0
FRI	3 Jun 88	10076	64.5	65.1	70.4	9616	95.4	7918	78.6	4405	43.7	1118	11.1	201	2.0	42	0.4	10	0.1
FRI	2 Jun 89	10973	63.8	64.2	70.7	9836	89.6	7772	70.8	4222	38.5	1474	13.4	413	3.8	99	0.9	31	0.3

TABLE A-3

SPEED DATA FOR RIS-03

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
WED	11 Jan 83	8780	53.8	55.3	60.6	4008	45.6	1055	12.0	176	2.0	43	0.5	9	0.1	1	0.0	0	0.0
WED	15 Feb 84	7808	60.4	60.9	65.7	6696	85.8	3821	48.9	1006	12.9	169	2.2	30	0.4	9	0.1	0	0.0
MON	21 Nov 85	7921	57.7	58.5	64.1	5658	71.4	2216	28.0	562	7.1	147	1.9	34	0.4	13	0.2	0	0.0
WED	26 Feb 86	8250	57.1	58.0	64.1	5293	64.2	2317	28.1	591	7.2	111	1.3	19	0.2	3	0.0	0	0.0
THU	22 Jan 87	9303	62.1	62.6	67.8	8764	94.2	5901	63.4	1932	20.8	431	4.6	75	0.8	14	0.2	0	0.0
FRI	22 Jan 88	11238	60.9	61.5	67.8	9409	83.7	6001	53.4	2320	20.6	540	4.8	69	0.6	11	0.1	0	0.0
FRI	27 Jan 89	12001	67.3	65.4	80.6	10577	88.1	8505	70.9	5685	47.4	3345	27.9	2209	18.4	1762	14.7	1418	11.8

TABLE A-4

SPEED DATA FOR RIC-04

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
FRI	24 Feb 84	3998	60.7	61.5	67.1	3442	86.1	2131	53.3	720	18.0	157	3.9	28	0.7	5	0.1	0	0.0
MON	10 Dec 84	3471	53.0	54.0	60.8	1355	39.0	489	14.1	141	4.1	35	1.0	7	0.2	3	0.1	0	0.0
MON	11 Nov 85	6958	56.6	59.2	65.2	5068	72.8	2557	36.7	739	10.6	204	2.9	31	0.4	12	0.2	0	0.0
TUE	25 Nov 86	7628	61.2	61.6	67.4	6847	89.8	4165	54.6	1439	18.9	388	5.1	86	1.1	19	0.2	0	0.0
SUN	22 Nov 87	6490	65.0	65.8	71.3	6204	95.6	5177	79.8	3150	48.5	1025	15.8	202	3.1	24	0.4	0	0.0
WED	7 Dec 88	6370	61.4	61.4	69.4	5336	83.8	3330	52.3	1691	26.5	620	9.7	136	2.1	23	0.4	0	0.0
MON	13 Nov 89	6935	65.6	66.4	73.5	6462	93.2	5256	75.8	3617	52.2	1610	23.2	480	6.9	148	2.1	54	0.8

TABLE A-5

SPEED DATA FOR RIS-05

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
FRI	18 Nov 83	3530	62.3	62.7	68.2	3296	93.4	2245	63.6	798	22.6	200	5.7	38	1.1	8	0.2	0	0.0
SAT	28 Sep 85	3867	59.7	59.8	65.5	3234	83.6	1509	39.0	475	12.3	147	3.8	32	0.8	8	0.2	0	0.0
MON	28 Oct 85	4407	60.2	60.3	65.9	3712	84.2	1973	44.8	640	14.5	201	4.6	45	1.0	6	0.1	0	0.0
TUE	11 Nov 86	3368	62.6	63.5	70.0	3099	92.0	2293	68.1	1084	32.2	363	10.8	103	3.1	28	0.8	0	0.0
WED	11 Nov 87	3975	63.6	65.8	70.9	3659	92.1	3203	80.6	1949	49.0	564	14.2	141	3.5	36	0.9	0	0.0
TUE	2 Aug 88	4473	63.6	64.0	69.7	4253	95.1	3371	75.4	1507	33.7	377	8.4	62	1.4	8	0.2	0	0.0
THU	20 Jul 89	5386	65.5	66.2	72.5	4988	92.6	4321	80.2	2754	51.1	1014	18.8	347	6.4	132	2.5	43	0.8

TABLE A-6

SPEED DATA FOR RIC-06

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
TUE	4 Jan 83	2213	61.3	61.7	67.7	1937	87.5	1211	54.7	443	20.0	116	5.2	20	0.9	2	0.1	0	0.0
TUE	27 Mar 84	2673	60.8	61.6	67.6	2254	84.3	1448	54.2	531	19.9	120	4.5	34	1.3	6	0.2	1	0.0
SAT	19 Feb 85	2409	59.2	59.8	67.5	1678	69.7	1060	44.0	459	19.1	133	5.5	7	0.3	2	0.1	0	0.0
TUE	4 Feb 86	2608	59.5	59.8	65.6	2008	77.0	1090	41.8	333	12.8	75	2.9	16	0.6	3	0.1	0	0.0
WED	14 Jan 87	2983	63.0	63.4	69.4	2769	92.8	2033	68.2	887	29.7	246	8.2	66	2.2	8	0.3	0	0.0
FRI	15 Jan 88	3493	66.3	67.1	73.2	3390	97.1	3069	87.9	2011	57.6	782	22.4	198	5.7	43	1.2	0	0.0
SAT	16 Dec 89	2784	65.5	65.7	73.8	2549	91.6	2137	76.8	1349	48.5	615	22.1	260	9.3	118	4.2	49	1.8

TABLE A-7

SPEED DATA FOR RIS-07

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED												
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
FRI	29 Oct 82	9059	60.1	61.2	66.2	7975	88.0	4630	51.1	1408	15.5	330	3.6	57	0.6	8	0.1	0	0.0
THU	27 Oct 83	9252	61.7	62.3	68.0	8354	90.3	5515	59.6	2004	21.7	478	5.2	86	0.9	29	0.3	0	0.0
WED	5 Jun 85	10758	58.7	59.9	65.1	8738	81.2	4420	41.1	1038	9.6	165	1.5	31	0.3	15	0.1	8	0.1
SAT	27 Sep 86	10941	59.8	60.1	65.5	9153	83.7	4676	42.7	1269	11.6	280	2.6	44	0.4	4	0.0	0	0.0
MON	28 Sep 87	11398	64.1	64.5	69.9	10997	96.5	9018	79.1	4247	37.3	953	8.4	126	1.1	15	0.1	0	0.0
WED	28 Sep 88	12079	62.1	64.3	70.8	10618	87.9	8712	72.1	4712	39.0	1683	13.9	436	3.6	103	0.9	0	0.0
WED	16 Aug 89	15812	66.7	66.9	74.3	15077	95.4	13190	83.4	8805	55.7	3872	24.5	1579	10.0	621	3.9	222	1.4

TABLE A-8

SPEED DATA FOR RIC-08

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED												
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
FRI	20 May 83	6613	64.3	64.6	70.6	6390	96.6	5071	76.7	2592	39.2	866	13.1	172	2.6	35	0.5	0	0.0
TUE	10 Apr 84	5219	63.4	63.8	69.6	4919	94.3	3773	72.3	1685	32.3	421	8.1	95	1.8	30	0.6	0	0.0
TUE	21 May 85	5958	64.9	64.9	71.6	5762	96.7	4671	78.4	2515	42.2	980	16.4	230	3.9	48	0.8	0	0.0
FRI	13 Jun 86	9433	60.5	61.1	67.4	7968	84.5	4805	50.9	1768	18.7	516	5.5	102	1.1	17	0.2	0	0.0
SAT	16 May 87	6487	61.8	62.0	68.1	5864	90.4	3711	57.2	1398	21.6	385	5.9	94	1.4	19	0.3	0	0.0
SUN	15 May 88	9257	67.3	67.9	73.6	9082	98.1	8343	90.1	6033	65.2	2269	24.5	574	6.2	132	1.4	18	0.2
TUE	21 Mar 89	7584	70.6	70.3	82.5	7128	94.0	6290	82.9	5072	66.9	3569	47.1	2451	32.3	1387	18.3	528	7.0

TABLE A-9

SPEED DATA FOR RIC-09

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED												
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
THU	31 Aug 83	9303	62.2	62.7	68.7	8388	90.2	5859	63.0	2367	25.4	585	6.3	113	1.2	39	0.4	0	0.0
SUN	8 Jul 84	9314	62.1	62.4	69.2	8228	88.3	5533	59.4	2387	25.6	830	8.9	273	2.9	100	1.1	0	0.0
SAT	7 Sep 85	7407	62.6	62.8	69.4	6864	92.7	4649	62.8	2037	27.5	694	9.4	136	1.8	26	0.4	0	0.0
FRI	5 Sep 86	9181	63.1	63.4	69.3	8742	95.2	6375	69.4	2641	28.8	740	8.1	138	1.5	21	0.2	0	0.0
WED	16 Sep 87	9688	65.0	65.5	70.7	9402	97.0	8102	83.6	4515	46.6	1258	13.0	213	2.2	28	0.3	0	0.0
THU	15 Sep 88	10715	64.5	64.9	70.4	10403	97.1	8576	80.0	4440	41.4	1222	11.4	171	1.6	21	0.2	0	0.0
WED	15 Feb 89	8089	69.6	69.8	78.4	7795	96.4	7243	89.5	5892	72.8	3448	42.6	1752	21.7	607	7.5	138	1.7

TABLE A–10

SPEED DATA FOR RIS–10

COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
MON	24 Jan 83	6074	60.8	61.5	67.9	4994	82.2	3219	53.0	1276	21.0	328	5.4	119	2.0	46	0.8	0	0.0
WED	27 Jun 84	10112	60.2	60.3	69.9	7374	72.9	4702	46.5	2452	24.2	1263	12.5	69	0.7	23	0.2	0	0.0
FRI	11 Oct 85	16376	60.9	61.5	69.1	14108	86.2	8698	53.1	4028	24.6	1487	9.1	392	2.4	95	0.6	0	0.0
SAT	22 Nov 86	12532	60.2	60.5	65.6	10590	84.5	5745	45.8	1533	12.2	302	2.4	74	0.6	19	0.2	3	0.0
SAT	21 Nov 87	11978	64.7	65.1	70.3	11582	96.7	9794	81.8	5153	43.0	1257	10.5	246	2.1	51	0.4	9	0.1
SAT	16 Jul 88	14003	64.9	65.2	70.7	13616	97.2	11114	79.4	6227	44.5	1860	13.3	393	2.8	101	0.7	17	0.1
FRI	19 May 89	11779	62.5	63.4	69.8	10213	86.7	7734	65.7	3889	33.0	1069	9.1	358	3.0	121	1.0	52	0.4

TABLE A–11

SPEED DATA FOR RIC–11

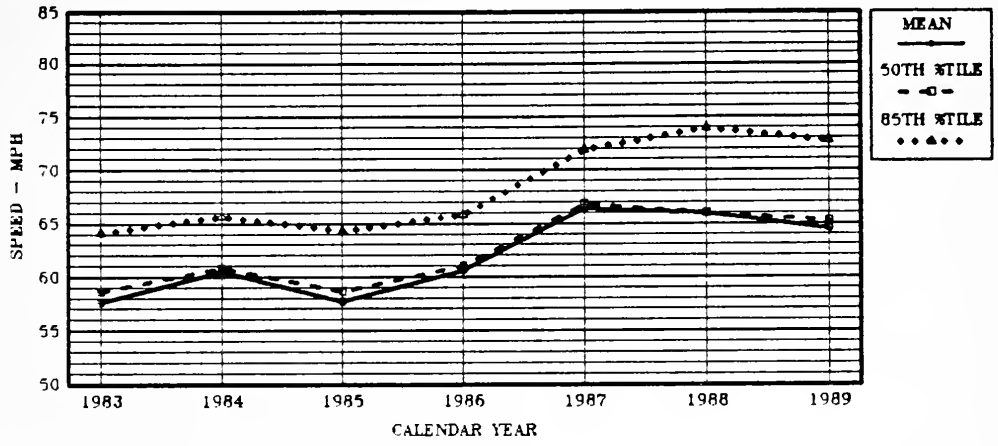
COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
THU	17 Mar 88	12377	63.0	63.3	69.0	11891	96.1	8556	69.1	3456	27.9	775	6.3	143	1.2	35	0.3	10	0.1
WED	18 Oct 89	13261	61.9	62.5	69.1	11452	86.4	7902	59.6	3598	27.1	1008	7.6	250	1.9	91	0.7	38	0.3

TABLE A–12

SPEED DATA FOR RIC–12

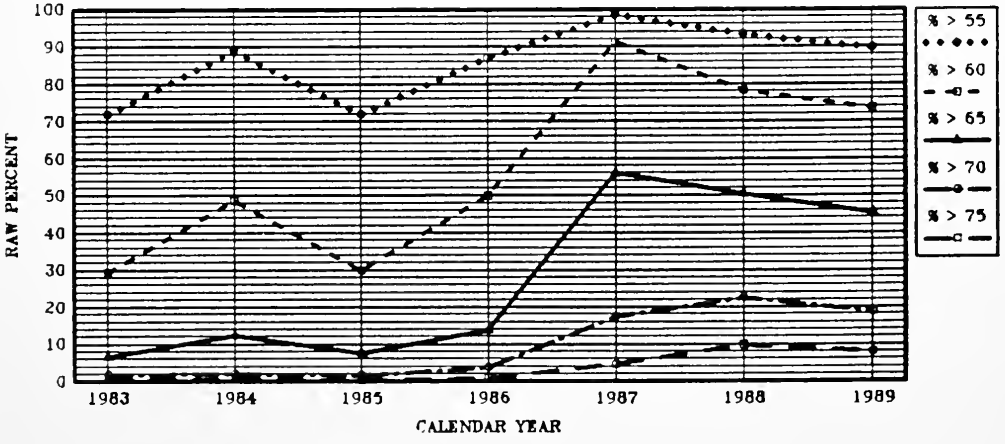
COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
SAT	3 Jun 88	12175	65.0	65.6	70.7	11697	96.1	9998	82.1	5733	47.1	1594	13.1	282	2.3	49	0.4	7	0.1
TUE	11 Apr 89	10230	65.9	66.6	72.5	9820	96.0	8457	82.7	5573	54.5	1993	19.5	491	4.8	116	1.1	29	0.3

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIS-01

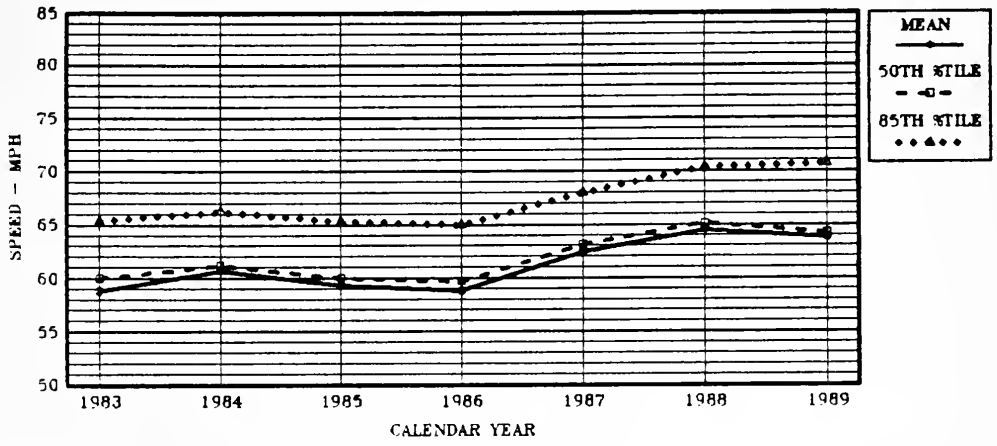
FIGURE A-1A



Location: RIS-01

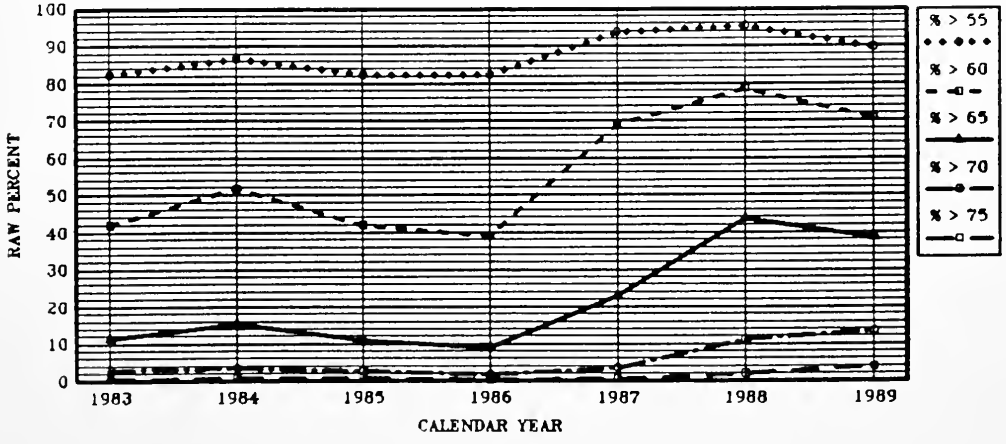
FIGURE A-1B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIS-02

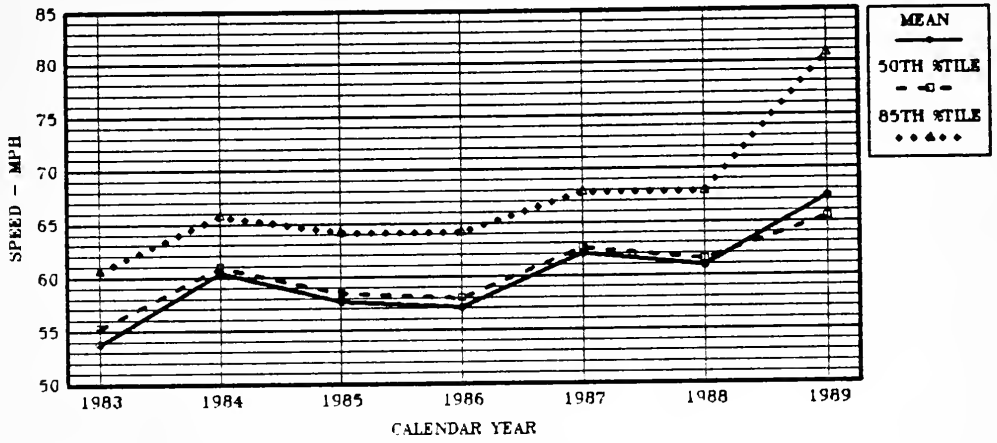
FIGURE A-2A



Location: RIS-02

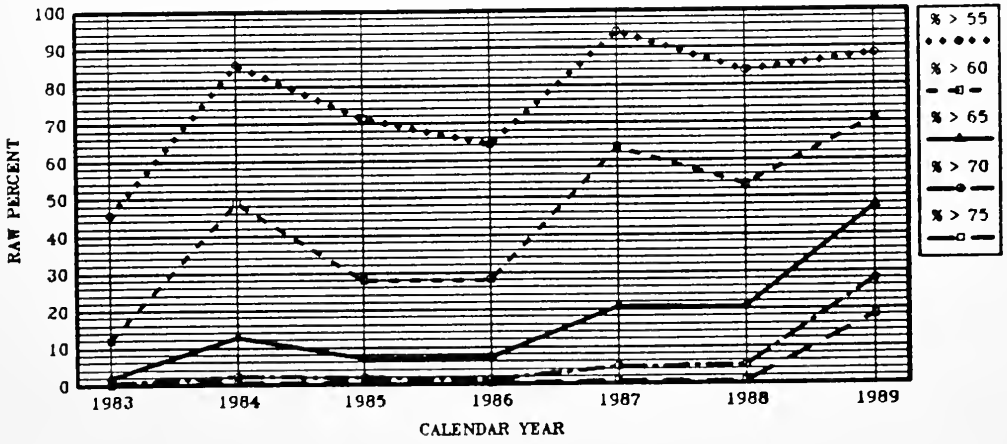
FIGURE A-2B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIS-03

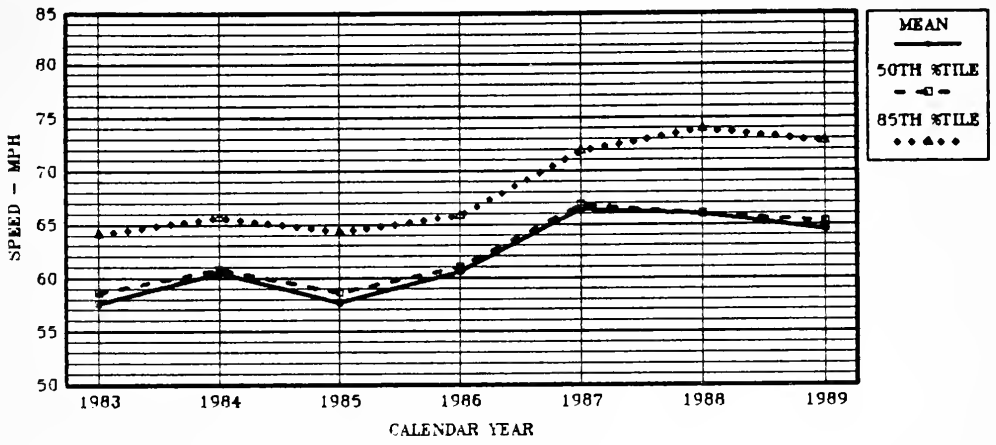
FIGURE A-3A



Location: RIS-03

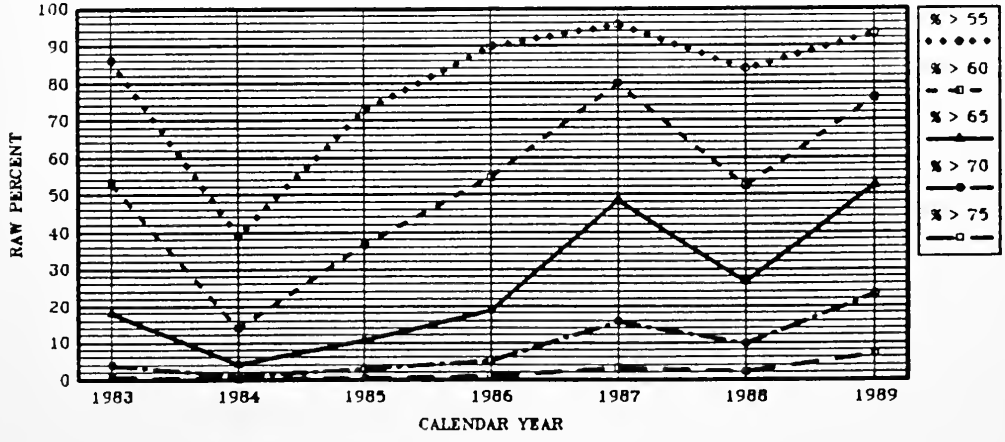
FIGURE A-3B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIC-04

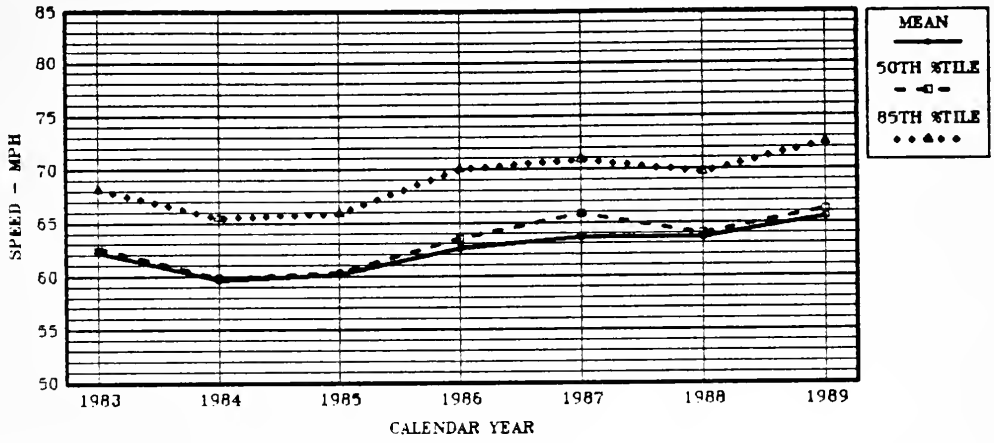
FIGURE A-4A



Location: RIC-04

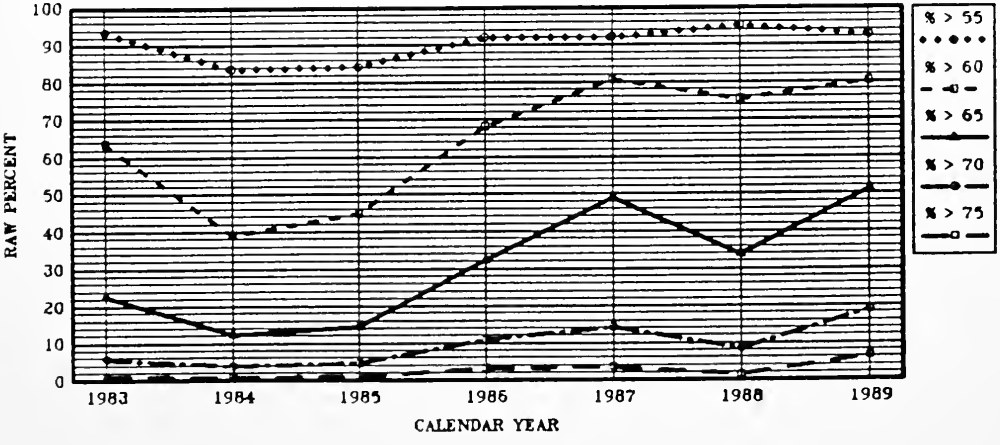
FIGURE A-4B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIS-05

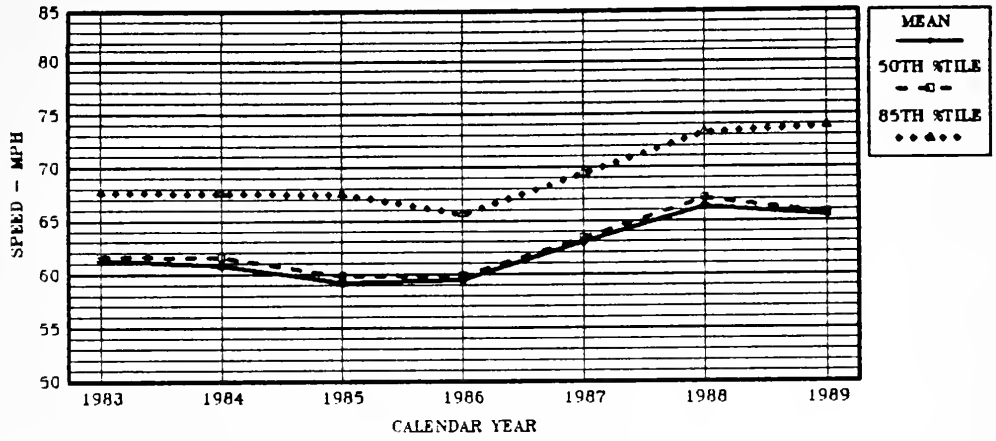
FIGURE A-5A



Location: RIS-05

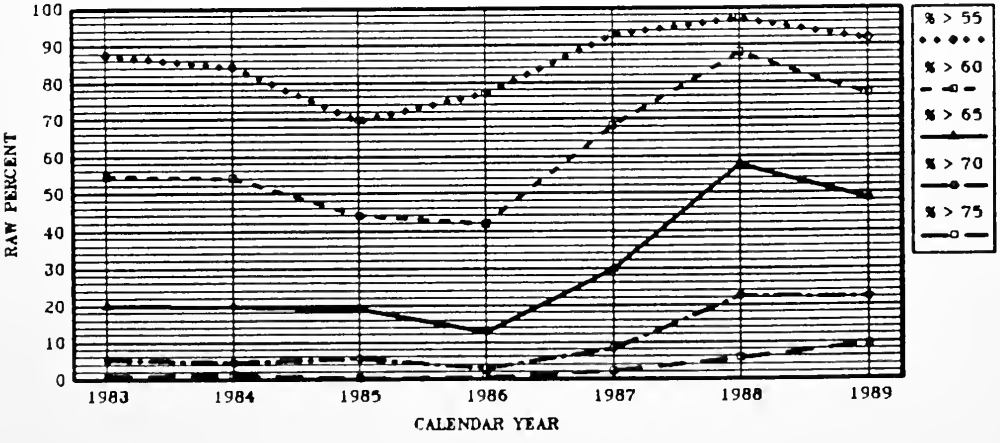
FIGURE A-5B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIC-06

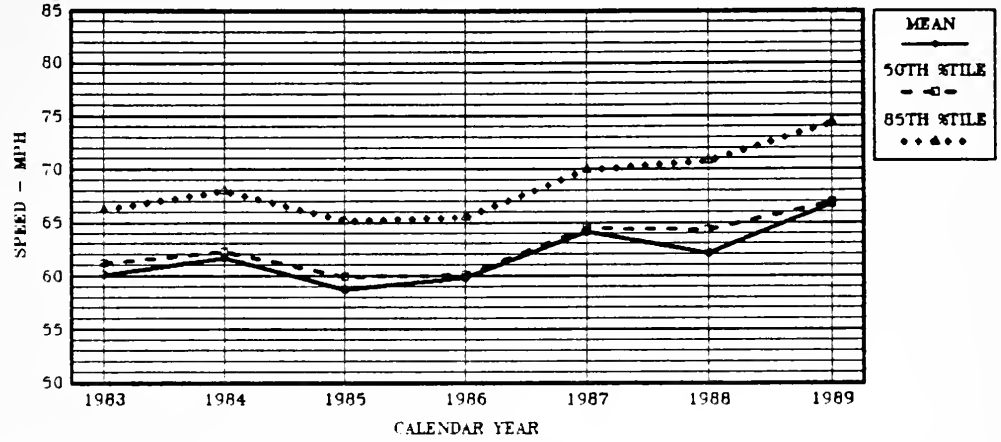
FIGURE A-6A



Location: RIC-06

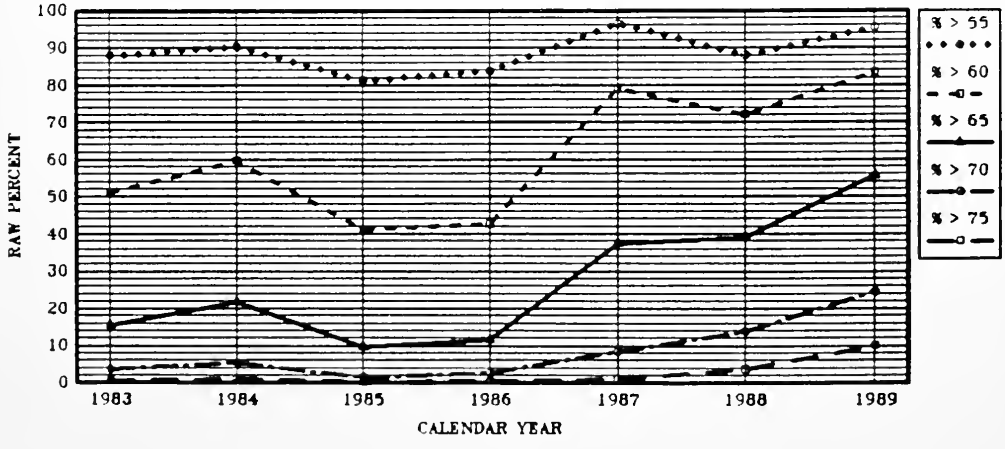
FIGURE A-6B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIS-07

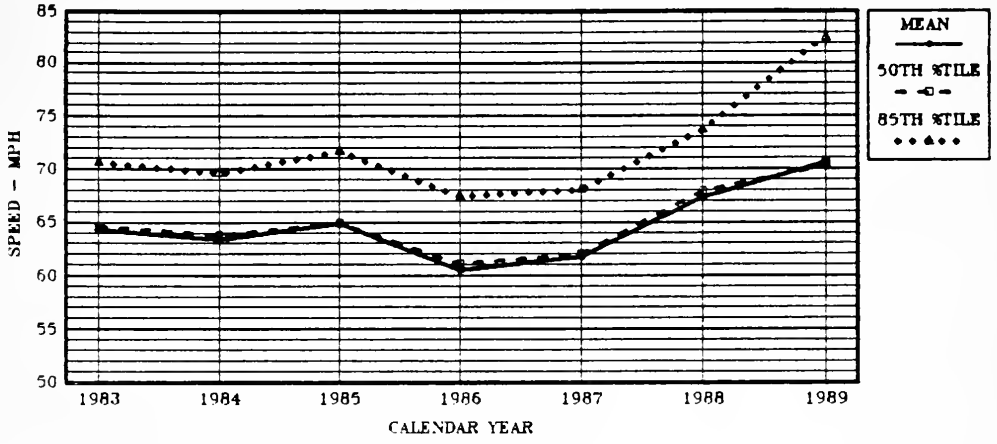
FIGURE A-7A



Location: RIS-07

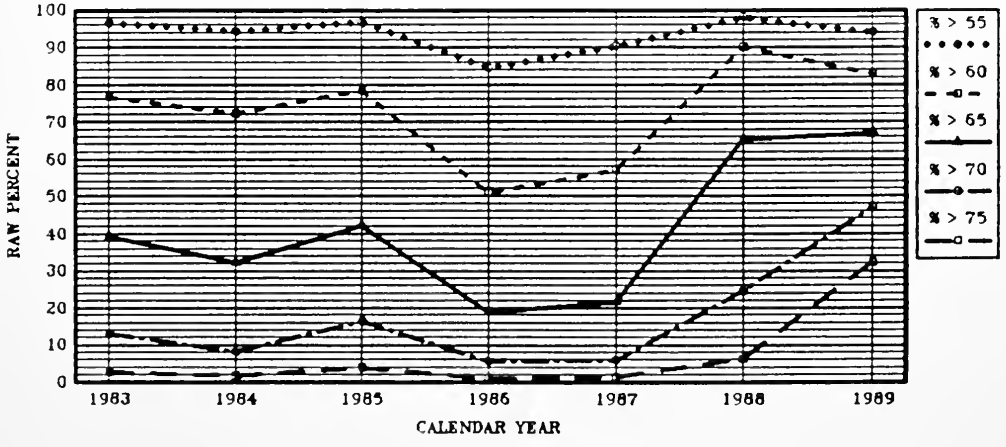
FIGURE A-7B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIC-08

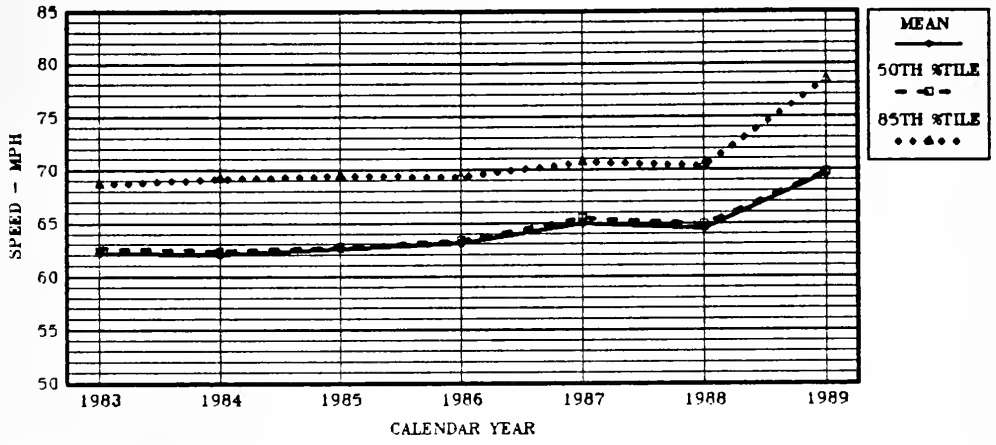
FIGURE A-8A



Location: RIC-08

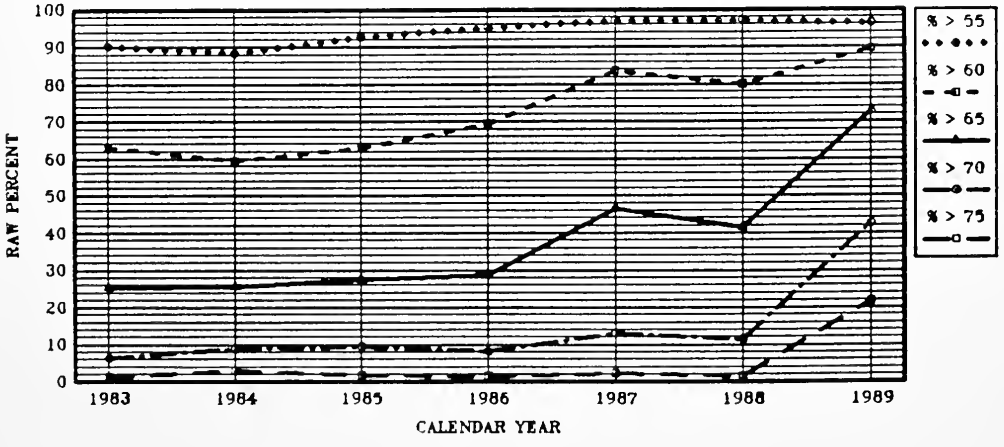
FIGURE A-8B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIC-09

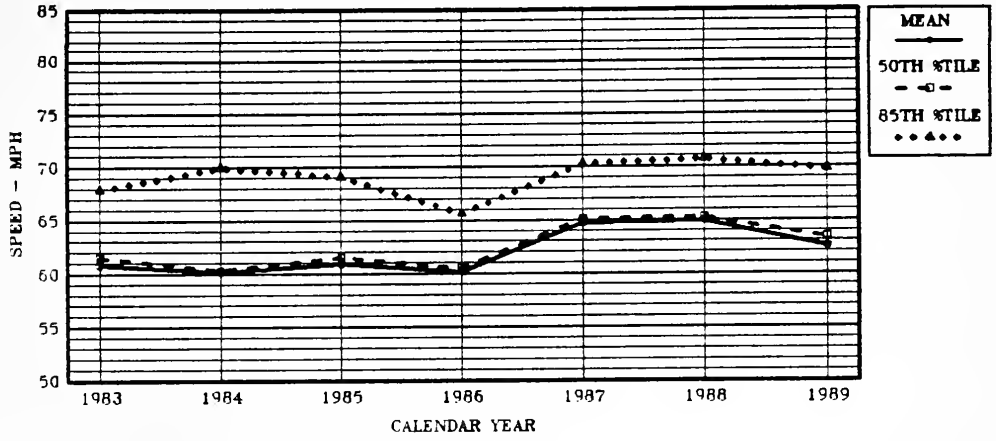
FIGURE A-9A



Location: RIC-09

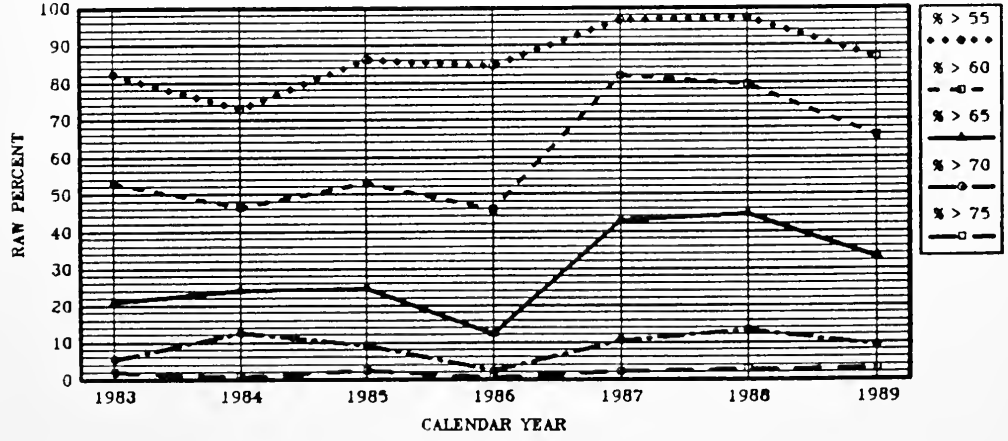
FIGURE A-9B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIS-10

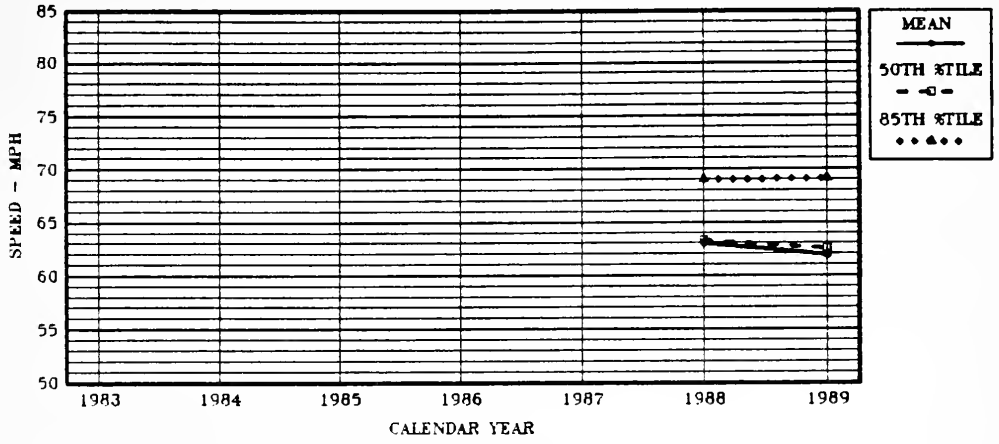
FIGURE A-10A



Location: RIS-10

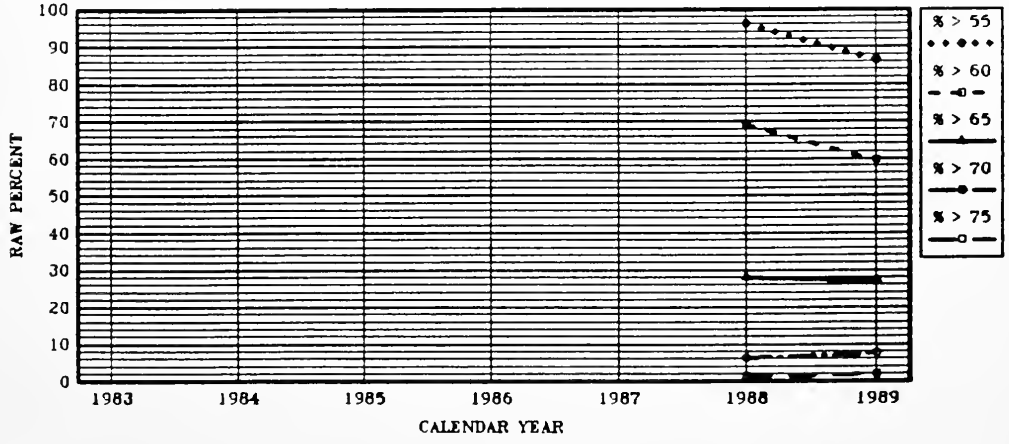
FIGURE A-10B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIC-11

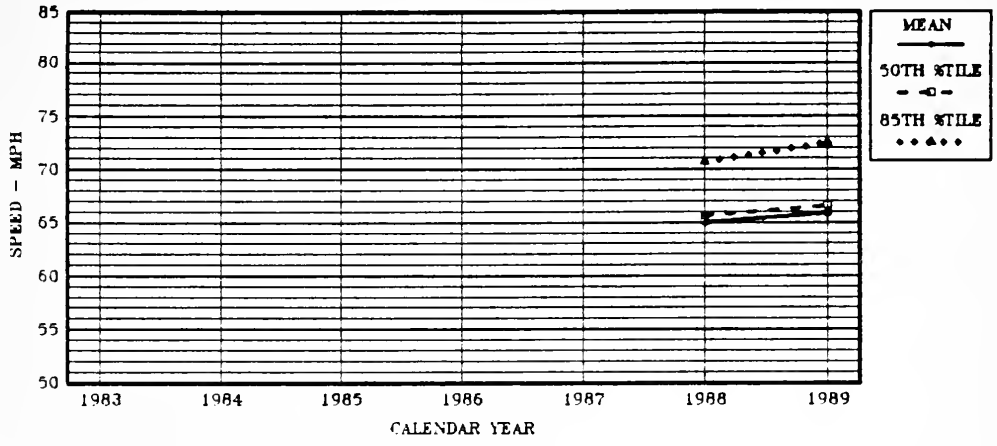
FIGURE A-11A



Location: RIC-11

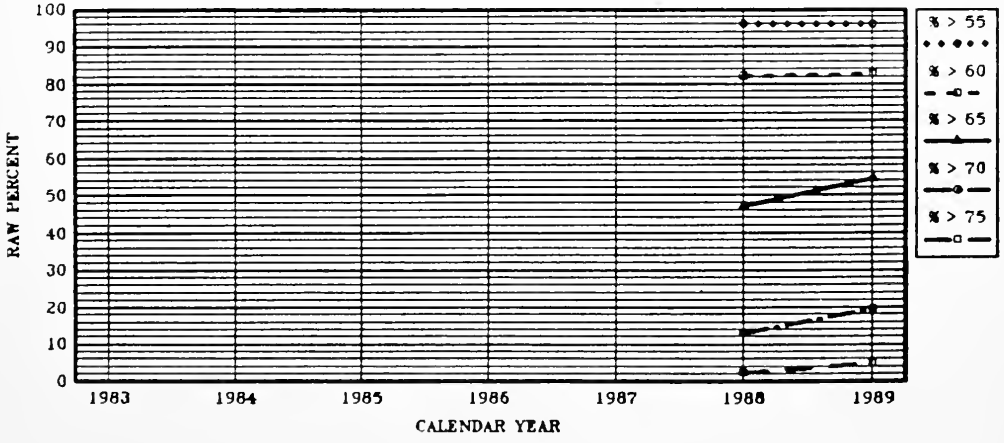
FIGURE A-11B

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: RIC-12

FIGURE A-12A



Location: RIC-12

FIGURE A-12B

Appendix B

Rural Interstate Speed Data

by

Calendar Year (1983 thru 1989)

1983-1989 Speed Data Tables (B-1 thru B-7)

Mean Speed Figures (B-1 thru B-2)

TABLE B–1

SPEED DATA FOR 1983

SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	WED	20 Jul 83	5742	57.6	58.6	64.1	4127	71.9	1677	29.2	375	6.5	106	1.8	28	0.5	6	0.1
RIS-02	MON	13 Jun 83	6305	58.8	60.0	65.4	5193	82.4	2642	41.9	721	11.4	190	3.0	39	0.6	7	0.1
RIS-03	WED	11 Jan 83	8780	53.8	55.3	60.6	4008	45.6	1055	12.0	176	2.0	43	0.5	9	0.1	1	0.0
RIC-04	FRI	24 Feb 84	3998	60.7	61.5	67.1	3442	86.1	2131	53.3	720	18.0	157	3.9	28	0.7	5	0.1
RIS-05	FRI	18 Nov 83	3530	62.3	62.7	68.2	3296	93.4	2245	63.6	798	22.6	200	5.7	38	1.1	8	0.2
RIC-06	TUE	4 Jan 83	2213	61.3	61.7	67.7	1937	87.5	1211	54.7	443	20.0	116	5.2	20	0.9	2	0.1
RIS-07	FRI	29 Oct 82	9059	60.1	61.2	66.2	7975	88.0	4630	51.1	1408	15.5	330	3.6	57	0.6	8	0.1
RIC-08	FRI	20 May 83	6613	64.3	64.6	70.6	6390	96.6	5071	76.7	2592	39.2	866	13.1	172	2.6	35	0.5
RIC-09	THU	31 Aug 83	9303	62.2	62.7	68.7	8388	90.2	5859	63.0	2367	25.4	585	6.3	113	1.2	39	0.4
RIS-10	MON	24 Jan 83	6074	60.8	61.5	67.9	4994	82.2	3219	53.0	1276	21.0	328	5.4	119	2.0	46	0.8

TABLE B–2

SPEED DATA FOR 1984

SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	FRI	14 Sep 84	8979	60.5	60.8	65.6	7984	88.9	4376	48.7	1093	12.2	179	2.0	50	0.6	18	0.2
RIS-02	FRI	18 May 84	6825	60.7	61.2	66.2	5916	86.7	3529	51.7	1049	15.4	230	3.4	53	0.8	23	0.3
RIS-03	WED	15 Feb 84	7808	60.4	60.9	65.7	6696	85.8	3821	48.9	1006	12.9	169	2.2	30	0.4	9	0.1
RIC-04	MON	10 Dec 84	3471	53.0	54.0	60.8	1355	39.0	489	14.1	141	4.1	35	1.0	7	0.2	3	0.1
RIS-05	SAT	28 Sep 85	3867	59.7	59.8	65.5	3234	83.6	1509	39.0	475	12.3	147	3.8	32	0.8	8	0.2
RIC-06	TUE	27 Mar 84	2673	60.8	61.6	67.6	2254	84.3	1448	54.2	531	19.9	120	4.5	34	1.3	6	0.2
RIS-07	THU	27 Oct 83	9252	61.7	62.3	68.0	8354	90.3	5515	59.6	2004	21.7	478	5.2	86	0.9	29	0.3
RIC-08	TUE	10 Apr 84	5219	63.4	63.8	69.6	4919	94.3	3773	72.3	1685	32.3	421	8.1	95	1.8	30	0.6
RIC-09	SUN	8 Jul 84	9314	62.1	62.4	69.2	8228	88.3	5533	59.4	2387	25.6	830	8.9	273	2.9	100	1.1
RIS-10	WED	27 Jun 84	10112	60.2	60.3	69.9	7374	72.9	4702	46.5	2452	24.2	1263	12.5	69	0.7	23	0.2

TABLE B-3

SPEED DATA FOR 1985

SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	WED	4 Sep 85	5133	57.7	58.6	64.3	3692	71.9	1529	29.8	379	7.4	84	1.6	14	0.3	6	0.1
RIS-02	THU	15 Nov 84	5467	59.3	60.0	65.3	4504	82.4	2294	42.0	590	10.8	151	2.8	43	0.8	14	0.3
RIS-03	MON	21 Nov 85	7921	57.7	58.5	64.1	5658	71.4	2216	28.0	562	7.1	147	1.9	34	0.4	13	0.2
RIC-04	MON	11 Nov 85	6958	56.6	59.2	65.2	5068	72.8	2557	36.7	739	10.6	204	2.9	31	0.4	12	0.2
RIS-05	MON	28 Oct 85	4407	60.2	60.3	65.9	3712	84.2	1973	44.8	640	14.5	201	4.6	45	1.0	6	0.1
RIC-06	SAT	19 Feb 85	2409	59.2	59.8	67.5	1678	69.7	1060	44.0	459	19.1	133	5.5	7	0.3	2	0.1
RIS-07	WED	5 Jun 85	10758	58.7	59.9	65.1	8738	81.2	4420	41.1	1038	9.6	165	1.5	31	0.3	15	0.1
RIC-08	TUE	21 May 85	5958	64.9	64.9	71.6	5762	96.7	4671	78.4	2515	42.2	980	16.4	230	3.9	48	0.8
RIC-09	SAT	7 Sep 85	7407	62.6	62.8	69.4	6864	92.7	4649	62.8	2037	27.5	694	9.4	136	1.8	26	0.4
RIS-10	FRI	11 Oct 85	16376	60.9	61.5	69.1	14108	86.2	8698	53.1	4028	24.6	1487	9.1	392	2.4	95	0.6

TABLE B-4

SPEED DATA FOR 1986

SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	SAT	6 Sep 86	5692	60.6	61.0	65.8	4949	86.9	2832	49.8	782	13.7	211	3.7	47	0.8	12	0.2
RIS-02	THU	10 Jun 86	7571	58.8	59.7	65.0	6236	82.4	2952	39.0	678	9.0	134	1.8	26	0.3	7	0.1
RIS-03	WED	26 Feb 86	8250	57.1	58.0	64.1	5293	64.2	2317	28.1	591	7.2	111	1.3	19	0.2	3	0.0
RIC-04	TUE	25 Nov 86	7628	61.2	61.6	67.4	6847	89.8	4165	54.6	1439	18.9	388	5.1	86	1.1	19	0.2
RIS-05	TUE	11 Nov 86	3368	62.6	63.5	70.0	3099	92.0	2293	68.1	1084	32.2	363	10.8	103	3.1	28	0.8
RIC-06	TUE	4 Feb 86	2608	59.5	59.8	65.6	2008	77.0	1090	41.8	333	12.8	75	2.9	16	0.6	3	0.1
RIS-07	SAT	27 Sep 86	10941	59.8	60.1	65.5	9153	83.7	4676	42.7	1269	11.6	280	2.6	44	0.4	4	0.0
RIC-08	FRI	13 Jun 86	9433	60.5	61.1	67.4	7968	84.5	4805	50.9	1768	18.7	516	5.5	102	1.1	17	0.2
RIC-09	FRI	5 Sep 86	9181	63.1	63.4	69.3	8742	95.2	6375	69.4	2641	28.8	740	8.1	138	1.5	21	0.2
RIS-10	SAT	22 Nov 86	12532	60.2	60.5	65.6	10590	84.5	5745	45.8	1533	12.2	302	2.4	74	0.6	19	0.2

TABLE B-5

SPEED DATA FOR 1987

SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	TUE	22 Sep 87	7178	66.4	66.8	71.9	7079	98.6	6543	91.2	4019	56.0	1249	17.4	322	4.5	55	0.8
RIS-02	WED	3 Jun 87	7829	62.4	63.1	68.0	7340	93.8	5396	68.9	1800	23.0	272	3.5	48	0.6	9	0.1
RIS-03	THU	22 Jan 87	9303	62.1	62.6	67.8	8764	94.2	5901	63.4	1932	20.8	431	4.6	75	0.8	14	0.2
RIC-04	SUN	22 Nov 87	6490	65.0	65.8	71.3	6204	95.6	5177	79.8	3150	48.5	1025	15.8	202	3.1	24	0.4
RIS-05	WED	11 Nov 87	3975	63.6	65.8	70.9	3659	92.1	3203	80.6	1949	49.0	564	14.2	141	3.5	36	0.9
RIC-06	WED	14 Jan 87	2983	63.0	63.4	69.4	2769	92.8	2033	68.2	887	29.7	246	8.2	66	2.2	8	0.3
RIS-07	MON	28 Sep 87	11398	64.1	64.5	69.9	10997	96.5	9018	79.1	4247	37.3	953	8.4	126	1.1	15	0.1
RIC-08	SAT	16 May 87	6487	61.8	62.0	68.1	5864	90.4	3711	57.2	1398	21.6	385	5.9	94	1.4	19	0.3
RIC-09	WED	16 Sep 87	9688	65.0	65.5	70.7	9402	97.0	8102	83.6	4515	46.6	1258	13.0	213	2.2	28	0.3
RIS-10	SAT	21 Nov 87	11978	64.7	65.1	70.3	11582	96.7	9794	81.8	5153	43.0	1257	10.5	246	2.1	51	0.4

TABLE B-6

SPEED DATA FOR 1988

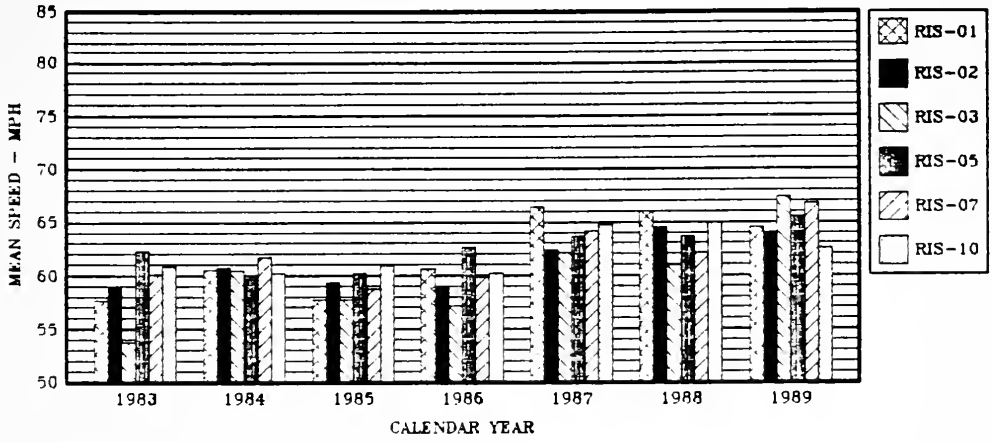
SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	THU	22 Sep 88	6304	66.0	66.0	73.9	5881	93.3	4930	78.2	3168	50.3	1421	22.5	608	9.6	280	4.4
RIS-02	FRI	3 Jun 88	10076	64.5	65.1	70.4	9616	95.4	7918	78.6	4405	43.7	1118	11.1	201	2.0	42	0.4
RIS-03	FRI	22 Jan 88	11238	60.9	61.5	67.8	9409	83.7	6001	53.4	2320	20.6	540	4.8	69	0.6	11	0.1
RIC-04	WED	7 Dec 88	6370	61.4	61.4	69.4	5336	83.8	3330	52.3	1691	26.5	620	9.7	136	2.1	23	0.4
RIS-05	TUE	2 Aug 88	4473	63.6	64.0	69.7	4253	95.1	3371	75.4	1507	33.7	377	8.4	62	1.4	8	0.2
RIC-06	FRI	15 Jan 88	3493	66.3	67.1	73.2	3390	97.1	3069	87.9	2011	57.6	782	22.4	198	5.7	43	1.2
RIS-07	WED	28 Sep 88	12079	62.1	64.3	70.8	10618	87.9	8712	72.1	4712	39.0	1683	13.9	436	3.6	103	0.9
RIC-08	SUN	15 May 88	9257	67.3	67.9	73.6	9082	98.1	8343	90.1	6033	65.2	2269	24.5	574	6.2	132	1.4
RIC-09	THU	15 Sep 88	10715	64.5	64.9	70.4	10403	97.1	8576	80.0	4440	41.4	1222	11.4	171	1.6	21	0.2
RIS-10	SAT	16 Jul 88	14003	64.9	65.2	70.7	13616	97.2	11114	79.4	6227	44.5	1860	13.3	393	2.8	101	0.7
RIC-11	THU	17 Mar 88	12377	63.0	63.3	69.0	11891	96.1	8556	69.1	3456	27.9	775	6.3	143	1.2	35	0.3
RIC-12	SAT	3 Jun 88	12175	65.0	65.6	70.7	11697	96.1	9998	82.1	5733	47.1	1594	13.1	282	2.3	49	0.4

TABLE B-7

SPEED DATA FOR 1989

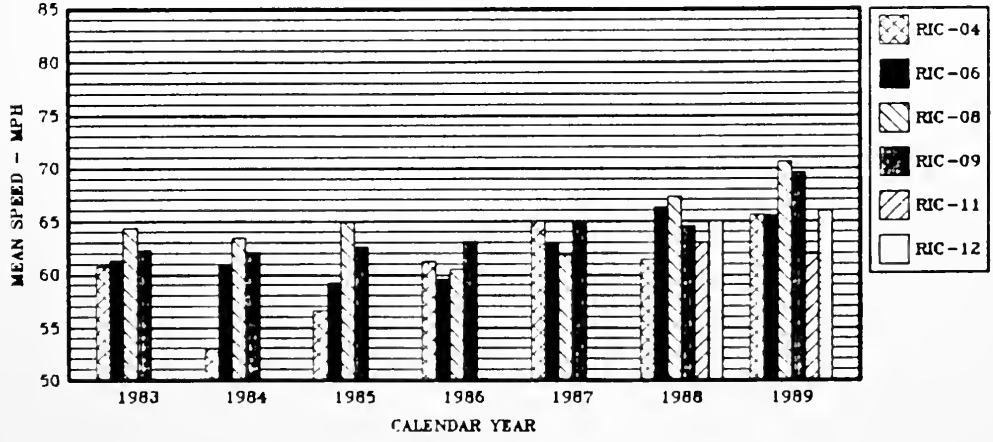
SPEED	COLLECTION		TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED											
SITE	DAY	DATE	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80
RIS-01	THU	14 Sep 89	6651	64.5	65.2	72.7	5966	89.7	4889	73.5	3019	45.4	1245	18.7	523	7.9	221	3.3
RIS-02	FRI	2 Jun 89	10973	63.8	64.2	70.7	9836	89.6	7772	70.8	4222	38.5	1474	13.4	413	3.8	99	0.9
RIS-03	FRI	27 Jan 89	12001	67.3	65.4	80.6	10577	88.1	8505	70.9	5685	47.4	3345	27.9	2209	18.4	1762	14.7
RIC-04	MON	13 Nov 89	6935	65.6	66.4	73.5	6462	93.2	5256	75.8	3617	52.2	1610	23.2	480	6.9	148	2.1
RIS-05	THU	20 Jul 89	5386	65.5	66.2	72.5	4988	92.6	4321	80.2	2754	51.1	1014	18.8	347	6.4	132	2.5
RIC-06	SAT	16 Dec 89	2784	65.5	65.7	73.8	2549	91.6	2137	76.8	1349	48.5	615	22.1	260	9.3	118	4.2
RIS-07	WED	16 Aug 89	15812	66.7	66.9	74.3	15077	95.4	13190	83.4	8805	55.7	3872	24.5	1579	10.0	621	3.9
RIC-08	TUE	21 Mar 89	7584	70.6	70.3	82.5	7128	94.0	6290	82.9	5072	66.9	3569	47.1	2451	32.3	1387	18.3
RIC-09	WED	15 Feb 89	8089	69.6	69.8	78.4	7795	96.4	7243	89.5	5892	72.8	3448	42.6	1752	21.7	607	7.5
RIS-10	FRI	19 May 89	11779	62.5	63.4	69.8	10213	86.7	7734	65.7	3889	33.0	1069	9.1	358	3.0	121	1.0
RIC-11	WED	18 Oct 89	13261	61.9	62.5	69.1	11452	86.4	7902	59.6	3598	27.1	1008	7.6	250	1.9	91	0.7
RIC-12	TUE	11 Apr 89	10230	65.9	66.6	72.5	9820	96.0	8457	82.7	5573	54.5	1993	19.5	491	4.8	116	1.1

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Location: All RIS

FIGURE B-1



Location: All RIC

FIGURE B-2

Appendix C

Rural Interstate Speed Data

Speed vs. Vehicle Length

at

RIS-03 & RIC-06

Speed by Length Data Tables For RIS-03 (C-1 and C-2)

Speed by Length Data Tables For RIC-06 (C-3 and C-4)

Speed by Length Figures (C-1 and C-2)

TABLE C-1

SPEED BY LENGTH DATA AT RIS-03 FOR 27 SEPTEMBER 1988

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	6906	66.5	66.7	74.1	6626	95.9	5846	84.7	3763	54.5	1582	22.9	704	10.2
SRT. TRK.	(21-45')	665	60.4	60.4	67.2	494	74.3	311	46.8	119	17.9	41	6.2	29	4.4
LNG. TRK.	(46-99')	4460	61.9	61.4	68.9	3733	83.7	2333	52.3	1014	22.7	422	9.5	235	5.3
ALL TRK.	(21-99')	5125	61.7	61.3	68.7	4227	82.5	2644	51.6	1133	22.1	463	9.0	264	5.2
ALL VEH.	(1-99')	12031	64.4	64.4	72.1	10853	90.2	8490	70.6	4896	40.7	2045	17.0	968	8.0

SPEED BY LENGTH DATA AT RIS-03 FOR 28 SEPTEMBER 1988

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	6901	67.3	67.7	75.1	6625	96.0	5968	86.5	4184	60.6	1989	28.8	817	11.8
SRT. TRK.	(21-45')	720	60.4	60.3	68.9	514	71.4	334	46.4	169	23.5	63	8.8	31	4.3
LNG. TRK.	(46-99')	4660	61.5	61.4	69.4	3642	78.2	2436	52.3	1195	25.6	461	9.9	207	4.4
ALL TRK.	(21-99')	5380	61.3	61.3	69.3	4156	77.2	2770	51.5	1364	25.4	524	9.7	238	4.4
ALL VEH.	(1-99')	12281	64.7	65.1	73.3	10781	87.8	8738	71.2	5548	45.2	2513	20.5	1055	8.6

SPEED BY LENGTH DATA AT RIS-03 FOR 29 SEPTEMBER 1988

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	7710	65.7	65.7	73.9	7178	93.1	6012	78.0	3707	48.1	1668	21.6	795	10.3
SRT. TRK.	(21-45')	752	57.1	56.8	65.1	406	54.0	225	29.9	87	11.6	34	4.5	23	3.1
LNG. TRK.	(46-99')	4634	60.0	59.2	67.6	3292	71.0	1764	38.1	827	17.8	409	8.8	238	5.1
ALL TRK.	(21-99')	5386	59.6	58.9	67.1	3698	68.7	1989	36.9	914	17.0	443	8.2	261	4.8
ALL VEH.	(1-99')	13096	63.2	63.1	71.7	10876	83.0	8001	61.1	4621	35.3	2111	16.1	1056	8.1

TABLE C-2

SPEED BY LENGTH DATA AT RIS-03 FOR 26 SEPTEMBER 1989

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	7393	65.9	66.5	72.3	7126	96.4	6224	84.2	3951	53.4	1373	18.6	323	4.4
SRT. TRK.	(21-45')	630	59.3	59.3	65.5	477	75.7	228	36.2	79	12.5	23	3.7	13	2.1
LNG. TRK.	(46-99')	4674	59.9	59.9	65.7	3732	79.8	1953	41.8	622	13.3	145	3.1	33	0.7
ALL TRK.	(21-99')	5304	59.8	59.8	65.7	4209	79.4	2181	41.1	701	13.2	168	3.2	46	0.9
ALL VEH.	(1-99')	12697	63.3	63.7	70.4	11335	89.3	8405	66.2	4652	36.6	1541	12.1	369	2.9

SPEED BY LENGTH DATA AT RIS-03 FOR 27 SEPTEMBER 1989

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	7634	66.3	66.9	72.7	7395	96.9	6580	86.2	4312	56.5	1533	20.1	398	5.2
SRT. TRK.	(21-45')	721	59.4	59.5	65.9	545	75.6	284	39.4	103	14.3	22	3.1	11	1.5
LNG. TRK.	(46-99')	5001	60.2	60.1	66.2	4032	80.6	2149	43.0	774	15.5	211	4.2	54	1.1
ALL TRK.	(21-99')	5722	60.1	60.0	66.1	4577	80.0	2433	42.5	877	15.3	233	4.1	65	1.1
ALL VEH.	(1-99')	13356	63.6	64.1	70.7	11972	89.6	9013	67.5	5189	38.9	1766	13.2	463	3.5

SPEED BY LENGTH DATA AT RIS-03 FOR 28 SEPTEMBER 1989

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	8249	66.0	66.6	72.5	7947	96.3	7005	84.9	4486	54.4	1604	19.4	369	4.5
SRT. TRK.	(21-45')	673	59.2	59.6	65.6	498	74.0	276	41.0	84	12.5	18	2.7	5	0.7
LNG. TRK.	(46-99')	4863	59.8	59.8	65.7	3819	78.5	1969	40.5	662	13.6	153	3.1	29	0.6
ALL TRK.	(21-99')	5536	59.7	59.7	65.7	4317	78.0	2245	40.6	746	13.5	171	3.1	34	0.6
ALL VEH.	(1-99')	13785	63.4	63.9	70.6	12264	89.0	9250	67.1	5232	38.0	1775	12.9	403	2.9

TABLE C-3

SPEED BY LENGTH DATA AT RIC-06 FOR 16 DECEMBER 1988

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	2640	69.0	68.7	80.5	2493	94.4	2167	82.1	1629	61.7	1051	39.8	666	25.2
SRT. TRK.	(21-45')	293	67.1	65.7	80.2	251	85.7	206	70.3	143	48.8	97	33.1	65	22.2
LNG. TRK.	(46-99')	998	67.1	66.0	79.1	891	89.3	710	71.1	498	49.9	314	31.5	212	21.2
ALL TRK.	(21-99')	1291	67.1	65.9	79.4	1142	88.5	916	71.0	641	49.7	411	31.8	277	21.5
ALL VEH.	(1-99')	3931	68.4	67.9	80.2	3635	92.5	3083	78.4	2270	57.7	1462	37.2	943	24.0

SPEED BY LENGTH DATA AT RIC-06 FOR 17 DECEMBER 1988

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	2347	67.1	67.5	74.4	2249	95.8	2025	86.3	1401	59.7	630	26.8	226	9.6
SRT. TRK.	(21-45')	235	65.4	65.4	73.5	216	91.9	177	75.3	110	46.8	50	21.3	21	8.9
LNG. TRK.	(46-99')	527	64.9	64.8	72.3	483	91.7	390	74.0	225	42.7	94	17.8	38	7.2
ALL TRK.	(21-99')	762	65.1	65.0	72.7	699	91.7	567	74.4	335	44.0	144	18.9	59	7.7
ALL VEH.	(1-99')	3109	66.6	66.9	74.1	2948	94.8	2592	83.4	1736	55.8	774	24.9	285	9.2

SPEED BY LENGTH DATA AT RIC-06 FOR 18 DECEMBER 1988

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	2376	65.0	66.3	73.8	2060	86.7	1655	69.7	1226	51.6	576	24.2	185	7.8
SRT. TRK.	(21-45')	233	64.1	65.1	73.2	190	81.5	160	68.7	107	45.9	47	20.2	19	8.2
LNG. TRK.	(46-99')	469	61.7	62.4	70.5	350	74.6	267	56.9	153	32.6	62	13.2	23	4.9
ALL TRK.	(21-99')	702	62.5	63.3	71.3	540	76.9	427	60.8	260	37.0	109	15.5	42	6.0
ALL VEH.	(1-99')	3078	64.4	65.6	73.4	2600	84.5	2082	67.6	1486	48.3	685	22.3	227	7.4

TABLE C-4

SPEED BY LENGTH DATA AT RIC-06 FOR 16 DECEMBER 1989

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	2093	66.1	66.5	74.1	1955	93.4	1691	80.8	1108	52.9	496	23.7	200	9.6
SRT. TRK.	(21-45')	149	66.0	65.3	82.7	120	80.5	96	64.4	71	47.7	45	30.2	32	21.5
LNG. TRK.	(46-99')	542	62.9	63.2	70.6	474	87.5	350	64.6	170	31.4	74	13.7	28	5.2
ALL TRK.	(21-99')	691	63.5	63.5	72.3	594	86.0	446	64.5	241	34.9	119	17.2	60	8.7
ALL VEH.	(1-99')	2784	65.5	65.7	73.8	2549	91.6	2137	76.8	1349	48.5	615	22.1	260	9.3

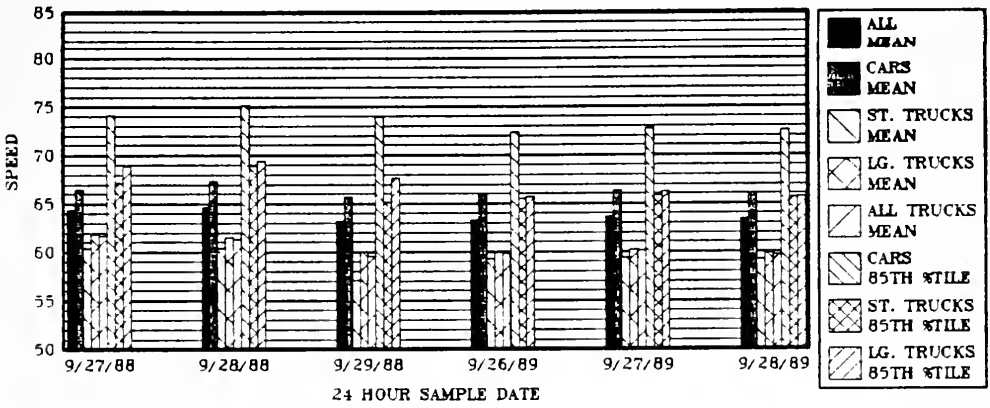
SPEED BY LENGTH DATA AT RIC-06 FOR 17 DECEMBER 1989

VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	2028	67.3	67.6	74.9	1950	96.2	1763	86.9	1218	60.1	587	28.9	220	10.8
SRT. TRK.	(21-45')	119	67.9	67.8	78.9	109	91.6	90	75.6	68	57.1	44	37.0	26	21.8
LNG. TRK.	(46-99')	433	63.0	63.2	70.2	369	85.2	274	63.3	142	32.8	51	11.8	23	5.3
ALL TRK.	(21-99')	552	64.1	63.9	72.3	478	86.6	364	65.9	210	38.0	95	17.2	49	8.9
ALL VEH.	(1-99')	2580	66.6	66.9	74.6	2428	94.1	2127	82.4	1428	55.3	682	26.4	269	10.4

SPEED BY LENGTH DATA AT RIC-06 FOR 18 DECEMBER 1989

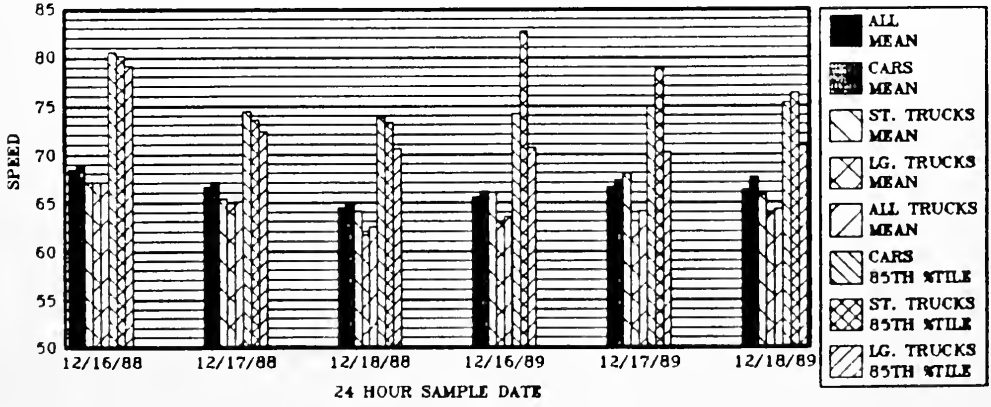
VEHICLE	VEHICLE	TOTAL	SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED									
TYPE	LENGTH	VEH'S	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75
CARS	(1-20')	2055	67.6	68.0	75.3	1964	95.6	1754	85.4	1305	63.5	625	30.4	256	12.5
SRT. TRK.	(21-45')	292	65.7	64.9	76.3	260	89.0	197	67.5	132	45.2	78	26.7	45	15.4
LNG. TRK.	(46-99')	983	63.7	63.7	70.8	900	91.6	662	67.3	341	34.7	138	14.0	53	5.4
ALL TRK.	(21-99')	1275	64.2	63.9	72.0	1160	91.0	859	67.4	473	37.1	216	16.9	98	7.7
ALL VEH.	(1-99')	3330	66.3	66.6	74.5	3124	93.8	2613	78.5	1778	53.4	841	25.3	354	10.6

RURAL INTERSTATE SPEED TRENDS
FOR INDIANA



Speed vs Length at RIS-03
Short Trucks = 21-45 Feet
Long Trucks = 46-99 Feet

FIGURE C-1



Speed vs Length at RIC-06
Short Trucks = 21-45 Feet
Long Trucks = 46-99 Feet

FIGURE C-2

Appendix D

Rural Interstate Speed Data

Speed vs. Vehicle Length

Statewide 1989

Speed by Length Data Tables (D-1 thru D-12)

TABLE D-1

1989 SPEED DATA BY LENGTH FOR RIS-01

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	4759	65.0	66.0	73.2	4334	91.1	3691	77.6	2390	50.2	974	20.5	376	7.9	144	3.0	50	1.1
SRT. TRK.	432	65.4	64.7	77.6	368	85.2	298	69.0	188	43.5	106	24.5	73	16.9	47	10.9	24	5.6
LNG. TRK.	1460	62.8	62.9	70.0	1264	86.6	900	61.6	441	30.2	165	11.3	74	5.1	30	2.1	12	0.8
ALL TRK.	1892	63.4	63.2	70.8	1632	86.3	1198	63.3	629	33.2	271	14.3	147	7.8	77	4.1	36	1.9
ALL VEH.	6651	64.5	65.2	72.7	5966	89.7	4889	73.5	3019	45.4	1245	18.7	523	7.9	221	3.3	86	1.3

TABLE D-2

1989 SPEED DATA BY LENGTH FOR RIS-02

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	8107	65.4	65.7	71.8	7750	95.6	6728	83.0	3883	47.9	1380	17.0	382	4.7	86	1.1	27	0.3
SRT. TRK.	607	59.0	59.4	65.9	426	70.2	245	40.4	87	14.3	28	4.6	9	1.5	4	0.7	1	0.2
LNG. TRK.	2259	59.1	59.1	65.2	1660	73.5	799	35.4	252	11.2	66	2.9	22	1.0	9	0.4	3	0.1
ALL TRK.	2866	59.0	59.1	65.4	2086	72.8	1044	36.4	339	11.8	94	3.3	31	1.1	13	0.5	4	0.1
ALL VEH.	10973	63.8	64.2	70.7	9836	89.6	7772	70.8	4222	38.5	1474	13.4	413	3.8	99	0.9	31	0.3

TABLE D-3

1989 SPEED DATA BY LENGTH FOR RIS-03

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	7870	71.1	68.8	86.7	7592	96.5	6800	86.4	4983	63.3	3089	39.3	2091	26.6	1688	21.4	1366	17.4
SRT. TRK.	645	63.7	63.3	72.3	526	81.6	390	60.5	244	37.8	111	17.2	56	8.7	35	5.4	22	3.4
LNG. TRK.	3486	59.3	59.1	65.6	2459	70.5	1315	37.7	458	13.1	145	4.2	62	1.8	39	1.1	30	0.9
ALL TRK.	4131	60.0	59.6	66.9	2985	72.3	1705	41.3	702	17.0	256	6.2	118	2.9	74	1.8	52	1.3
ALL VEH.	12001	67.3	65.4	80.6	10577	88.1	8505	70.9	5685	47.4	3345	27.9	2209	18.4	1762	14.7	1418	11.8

TABLE D-4

1989 SPEED DATA BY LENGTH FOR RIC-04

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	3705	68.9	69.5	75.4	3628	97.9	3429	92.6	2849	76.9	1428	38.5	432	11.7	124	3.3	32	0.9
SRT. TRK.	498	62.7	63.5	70.3	426	85.5	312	62.7	186	37.3	57	11.4	13	2.6	4	0.8	3	0.6
LNG. TRK	2732	61.5	61.8	67.9	2408	88.1	1515	55.5	582	21.3	125	4.6	35	1.3	20	0.7	19	0.7
ALL TRK.	3230	61.7	62.0	68.4	2834	87.7	1827	56.6	768	23.8	182	5.6	48	1.5	24	0.7	22	0.7
ALL VEH.	6935	65.6	66.4	73.5	6462	93.2	5256	75.8	3617	52.2	1610	23.2	480	6.9	148	2.1	54	0.8

TABLE D-5

1989 SPEED DATA BY LENGTH FOR RIS-05

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	3747	65.5	66.5	72.7	3427	91.5	3014	80.4	1993	53.2	731	19.5	237	6.3	80	2.1	25	0.7
SRT. TRK.	300	63.7	63.9	71.7	261	87.0	194	64.7	118	39.3	49	16.3	22	7.3	9	3.0	2	0.7
LNG. TRK.	1339	65.9	65.7	72.1	1300	97.1	1113	83.1	643	48.0	234	17.5	88	6.6	43	3.2	16	1.2
ALL TRK.	1639	65.5	65.5	72.1	1561	95.2	1307	79.7	761	46.4	283	17.3	110	6.7	52	3.2	18	1.1
ALL VEH.	5386	65.5	66.2	72.5	4988	92.6	4321	80.2	2754	51.1	1014	18.8	347	6.4	132	2.5	43	0.8

TABLE D-6

1989 SPEED DATA BY LENGTH FOR RIC-06

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES:	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	2093	66.1	66.5	74.1	1955	93.4	1691	80.8	1108	52.9	496	23.7	200	9.6	84	4.0	27	1.3
SRT. TRK.	149	66.0	65.3	82.7	120	80.5	96	64.4	71	47.7	45	30.2	32	21.5	24	16.1	19	12.8
LNG. TRK.	542	62.9	63.2	70.6	474	87.5	350	64.6	170	31.4	74	13.7	28	5.2	10	1.8	3	0.6
ALL TRK.	691	63.5	63.5	72.3	594	86.0	446	64.5	241	34.9	119	17.2	60	8.7	34	4.9	22	3.2
ALL VEH.	2784	65.5	65.7	73.8	2549	91.6	2137	76.8	1349	48.5	615	22.1	260	9.3	118	4.2	49	1.8

TABLE D-7

1989 SPEED DATA BY LENGTH FOR RIS-07

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	10029	67.4	67.7	74.5	9761	97.3	8950	89.2	6206	61.9	2676	26.7	994	9.9	344	3.4	97	1.0
SRT. TRK.	1000	66.0	65.5	76.1	897	89.7	717	71.7	478	47.8	264	26.4	151	15.1	72	7.2	34	3.4
LNG. TRK.	4783	65.3	65.0	73.2	4419	92.4	3523	73.7	2121	44.3	932	19.5	434	9.1	205	4.3	91	1.9
ALL TRK.	5783	65.4	65.1	73.7	5316	91.9	4240	73.3	2599	44.9	1196	20.7	585	10.1	277	4.8	125	2.2
ALL VEH.	15812	66.7	66.9	74.3	15077	95.4	13190	83.4	8805	55.7	3872	24.5	1579	10.0	621	3.9	222	1.4

TABLE D-8

1989 SPEED DATA BY LENGTH FOR RIC-08

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	5361	71.1	70.9	81.9	5178	96.6	4662	87.0	3788	70.7	2662	49.7	1770	33.0	922	17.2	287	5.4
SRT. TRK.	649	75.3	77.2	87.8	599	92.3	551	84.9	494	76.1	392	60.4	344	53.0	261	40.2	154	23.7
LNG. TRK.	1574	66.9	66.1	79.8	1351	85.8	1077	68.4	790	50.2	515	32.7	337	21.4	204	13.0	87	5.5
ALL TRK.	2223	69.4	68.3	83.9	1950	87.7	1628	73.2	1284	57.8	907	40.8	681	30.6	465	20.9	241	10.8
ALL VEH.	7584	70.6	70.3	82.5	7128	94.0	6290	82.9	5072	66.9	3569	47.1	2451	32.3	1387	18.2	528	7.0

TABLE D-9

1989 SPEED DATA BY LENGTH FOR RIC-09

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	3685	70.5	70.4	78.9	3627	98.4	3473	94.2	2914	79.1	1701	46.2	865	23.5	320	8.7	66	1.8
SRT. TRK.	461	68.7	69.3	77.8	436	94.6	402	87.2	330	71.6	181	39.3	90	19.5	31	6.7	7	1.5
LNG. TRK.	3943	68.8	69.1	77.9	3732	94.6	3368	85.4	2648	67.2	1566	39.7	797	20.2	256	6.5	65	1.6
ALL TRK.	4404	68.8	69.2	77.9	4168	94.6	3770	85.6	2978	67.6	1747	39.7	887	20.1	287	6.5	72	1.6
ALL VEH.	8089	69.6	69.8	78.4	7795	96.4	7243	89.5	5892	72.8	3448	42.6	1752	21.7	607	7.5	138	1.7

TABLE D-10

1989 SPEED DATA BY LENGTH FOR RIS-10

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	9426	63.2	64.1	70.1	8402	89.1	6725	71.3	3526	37.4	939	10.0	299	3.2	93	1.0	35	0.4
SRT. TRKS	763	59.6	59.7	67.1	557	73.0	317	41.5	132	17.3	54	7.1	27	3.5	14	1.8	7	0.9
LNG. TRKS.	1590	59.9	60.1	65.9	1254	78.9	692	43.5	231	14.5	76	4.8	32	2.0	14	0.9	10	0.6
ALL TRK.	2353	59.8	60.0	66.2	1811	77.0	1009	42.9	363	15.4	130	5.5	59	2.5	28	1.2	17	0.7
ALL VEH.	11779	62.5	63.4	69.8	10213	86.7	7734	65.7	3889	33.0	1069	9.1	358	3.0	121	1.0	52	0.4

TABLE D-11

1989 SPEED DATA BY LENGTH FOR RIC-11

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	8975	61.8	62.3	69.3	7624	84.9	5175	57.7	2498	27.8	775	8.6	189	2.1	73	0.8	30	0.3
SRT. TRK.	542	60.6	61.2	68.3	423	78.0	279	51.5	116	21.4	42	7.7	17	3.1	6	1.1	3	0.6
LNG. TRK.	3744	62.4	63.0	68.7	3405	90.9	2448	65.4	984	26.3	191	5.1	44	1.2	12	0.3	5	0.1
ALL TRK.	4286	62.1	62.8	68.6	3828	89.3	2727	63.6	1100	25.7	233	5.4	61	1.4	18	0.4	8	0.2
ALL VEH.	13261	61.9	62.5	69.1	11452	86.4	7902	59.6	3598	27.1	1008	7.6	250	1.9	91	0.7	38	0.3

TABLE D-12

1989 SPEED DATA BY LENGTH FOR RIC-12

		SPEED			NUMBER AND RAW PERCENT GREATER THAN SPEED													
VEHICLES	TOTAL	MEAN	50TH	85TH	>55	%>55	>60	%>60	>65	%>65	>70	%>70	>75	%>75	>80	%>80	>85	%>85
CARS	7564	67.1	67.8	73.5	7383	97.6	6746	89.2	4872	64.4	1816	24.0	439	5.8	105	1.4	23	0.3
SRT. TRK.	479	62.9	63.2	69.9	422	88.1	305	63.7	156	32.6	49	10.2	17	3.5	4	0.8	3	0.6
LNG. TRK.	2187	62.4	62.8	68.6	2015	92.1	1406	64.3	545	24.9	128	5.9	35	1.6	7	0.3	3	0.1
ALL TRK.	2666	62.5	62.9	68.9	2437	91.4	1711	64.2	701	26.3	177	6.6	52	2.0	11	0.4	6	0.2
ALL VEH.	10230	65.9	66.6	72.5	9820	96.0	8457	82.7	5573	54.5	1993	19.5	491	4.8	116	1.1	29	0.3

Appendix E

Rural Interstate Speed Data

Calculation Tables (E-1 and E-2)

TABLE E-1

1989 Rural Interstate Statistics VMT = 0.2139

1989 Stations	(Xhi) Number Vehicles	(Yhi) Number > 65 mph	(ph *Xhi)	(Yhi - ph * Xhi)^2
RIS-01	6651	3019	3190.22	29317.97
RIS-02	10973	4222	5263.32	1084346.31
RIS-03	12001	5685	5756.41	5099.52
RIC-04	6935	3617	3326.45	84420.10
RIS-05	5386	2754	2583.45	29086.00
RIC-06	2784	1349	1335.38	185.61
RIS-07	15812	8805	7584.40	1489867.29
RIC-08	7584	5072	3637.75	2057077.15
RIC-09	8089	5892	3879.98	4048235.14
RIS-10	11779	3889	5649.93	3100861.16
RIC-11	13261	3598	6360.78	7632973.98
RIC-12	10230	5573	4906.93	443647.35
TOTALS	111485	53475		20005117.59

(ph) =	0.4796609409
(Ph) % =	48.0
(Xbar) =	9290.42
(Sdh)^2 =	1818647.05
Standard Deviation S(ph) % =	4.19
(Wh^2)*(Sph^2) =	8.03375E-01
Statewide Standard error % =	0.90
Sampling Accuracy % =	1.60
Final % =	38.5

TABLE E-2

1988 DVMT, Mileage And Weighting Statistics

FUNCTIONAL CLASS	@ 55 & 65 MILES	@ 55 & 65 DVMT	VMT WEIGHTING FACTOR
(55MPH) UI	181.90	9232967	0.1288
UF	90.49	1787454	0.0249
UA	325.46	3606388	0.0503
(55MPH) RI	30.95	212087	0.0030
(65MPH) RI	818.74	15118042	0.2109
RA	3916.46	22809177	0.3183
RC	4854.36	18901558	0.2637
= > 55MPH TOTAL	10218.36	71667673	1.0000
STATEWIDE TOTAL	91561.00	139684000	
TOTAL RI (55MPH/65MPH) VMT WEIGHTING FACTOR			0.2139
PERCENT OF RURAL INTERSTATE DVMT ON FACILITIES WITH 55MPH & 65MPH SPEED LIMITS			10.97

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